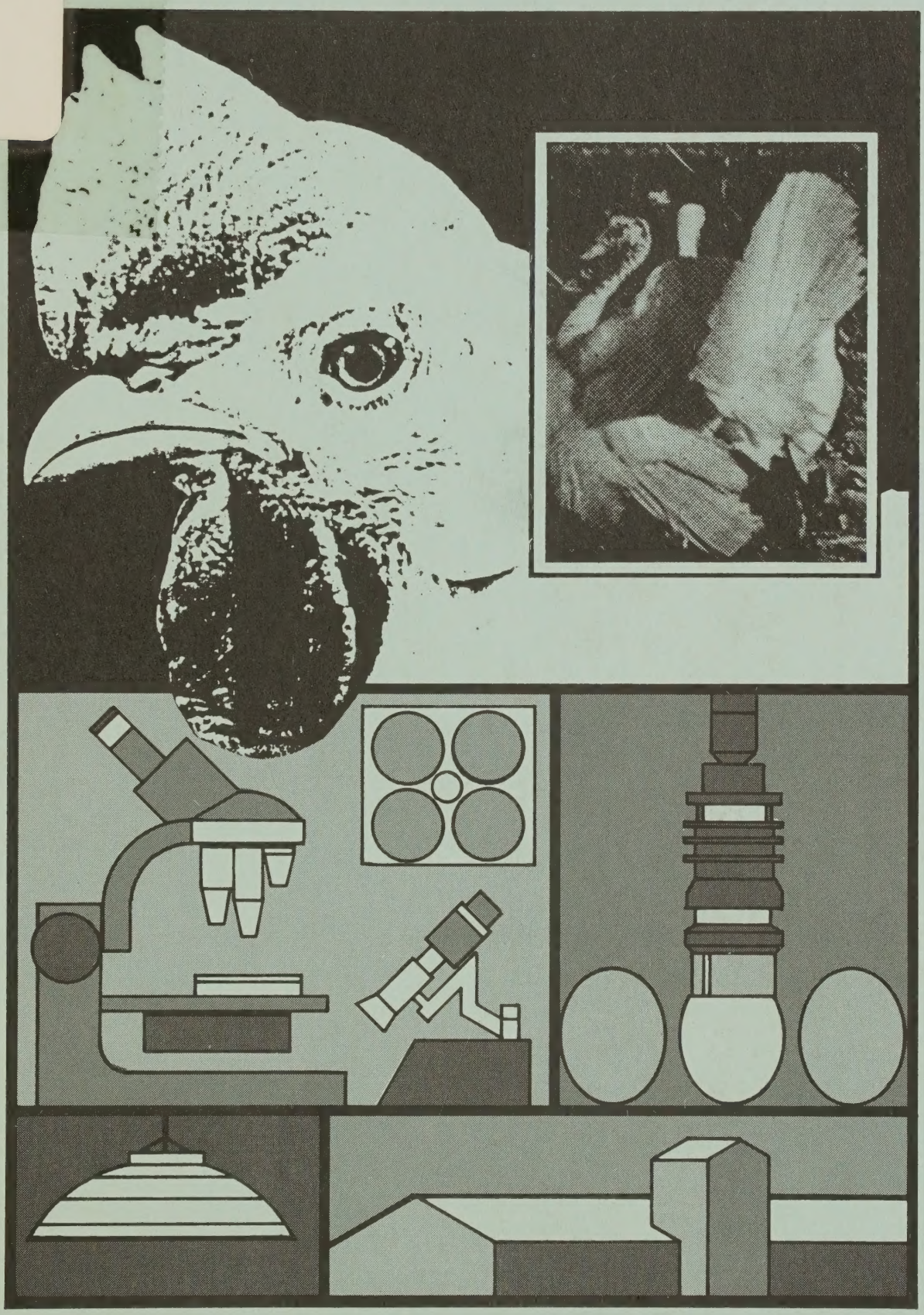
Poultry Improvement

Partners in Progress



United States
Department of
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Animal
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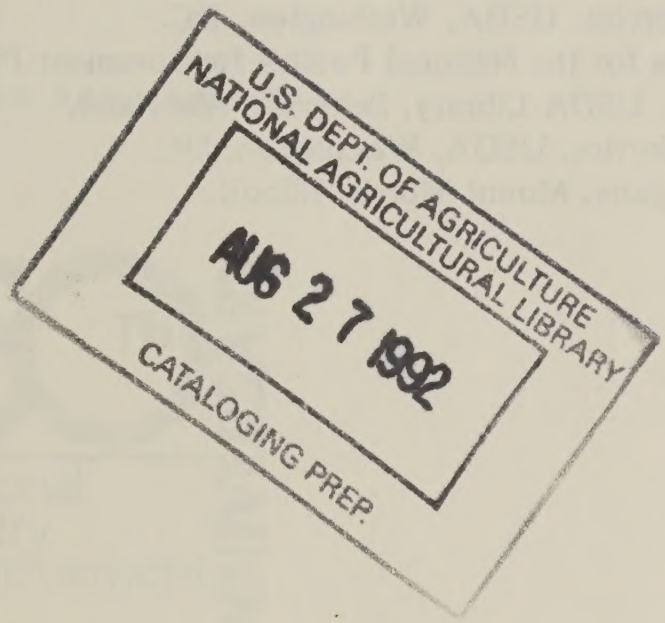

United States Department of Agriculture

PREPARED BY
Animal and Plant Health Inspection Service

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Table of Contents

50TH ANNIVERSARY
National Poultry Improvement Plan
1934-1984

NPIP
NATIONAL POULTRY IMPROVEMENT PLAN

Issued June 1984

Introduction

Information presented in this publication is intended to recognize the progress which has been made by the poultry industry in the United States during the past 50 years. Because some of the major contributions to the development of this fledgling industry occurred more than a half century ago, references to these events are also included.

Many individuals have been involved in the various facets of poultry production, which includes genetics, nutrition, pathology, physiology, environment, equipment, management, and administration. Numerous trade organizations have been formed to further the industry. Various State and Federal programs have been developed to aid in improving the different segments which make up the whole of poultry production.

With the resources available, it is impossible to recognize every person, organization, and program which has played a part in the development of this great industry. Therefore, just a sampling of these contributions is included and an apology is expressed for those which were omitted.

100 Years of Animal Health, Production, and Welfare 1884-1984

On May 29, 1884, the Bureau of Animal Industry (BAI), was created by Congress. Its job, as part of the Department of Agriculture, was to prevent the spread of livestock diseases and to promote the exportation of livestock from the United States. With the elimination of animal diseases and pests, our livestock became more productive.

The first director of the BAI was Dr. Daniel Salmon, an energetic, progressive veterinarian who secured the authority, manpower, and money necessary to quarantine premises, stop movement of infected animals, and pay for the destruction of diseased animals. Early efforts in the control of animal diseases eventually resulted in the successful eradication of contagious bovine pleuropneumonia and foot-and-mouth disease.

BAI scientists were soon at work conducting research on animal and poultry health and production problems. Various discoveries on disease transmission enabled control programs to be established for Texas fever ticks, hog cholera, screwworms, and similar pests. The development of the Beltsville turkey met the needs for a family-size turkey.

The National Poultry Improvement Plan and the Dairy Herd Improvement Association were developed to aid in the more efficient production of animal protein. The Meat Inspection Act of 1906 was the start of the movement to ensure the wholesomeness of meats. The Animal Welfare Act was enacted to assure humane care of protected species.

In the mid-1950's, the BAI was split into several separate agencies. Much of the work originally carried out by the BAI is presently continuing under the Animal and Plant Health Inspection Service, the Agricultural Research Service, and the Food Safety and Inspection Service.

Today, the people in these agencies continue to work with farmers and ranchers to improve the health of American livestock and increase production of meat, milk, and eggs. Today we have the healthiest livestock and the most abundant supply of food in the world.

Dedication

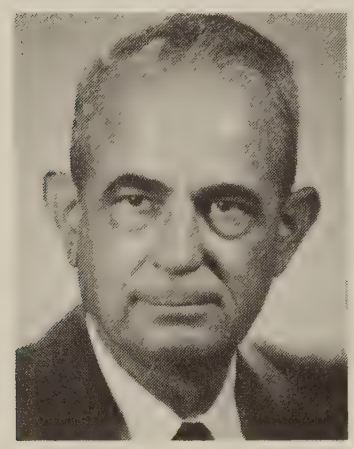
This publication is dedicated to three Senior Coordinators of the National Poultry Improvement Plan whose combined tenure as officers of the Plan spans 71 years, with nearly 50 of these years being served as Senior Coordinators.* Through foresight, dedication, and overall knowledge of the poultry industry, their leadership has contributed to a voluntary program in which nearly 90 percent of the U.S. poultry breeding and hatching industry participates. This program has aided U.S. breeders and hatcherymen in becoming leaders in providing breeding stock, baby poultry, and hatching eggs to the world's poultry industry.

*The General Conference Committee of the National Poultry Improvement Plan, an advisory committee to the Secretary of Agriculture, during their September 13-14, 1983 meeting, recommended that this publication be dedicated to these three individuals.

Mr. Paul B. Zumbro
1904-1980
Senior Coordinator, National Poultry Improvement Plan (1935-1961)

Mr. Paul B. Zumbro was born in Washington County, Ohio. He received a B.S. degree at Ohio State University in 1926 and served as poultry Extension specialist in Ohio for 9 years, during which time he wrote approximately 40 Extension publications. In 1935 he was instrumental in developing the NPIP under the USDA and served as its senior coordinator until 1961. In this capacity he exerted a tremendous influence in upgrading and improving the quality of chicks and poults produced by the hatchery industry in the United States. His leadership helped to pull the poultry industry through a period when disease control programs and improved breeding methods were sorely needed. In 1961 he was appointed assistant chief of the Poultry Research Branch, Agricultural Research Service, USDA, a position he held until he retired from Government service in 1972.

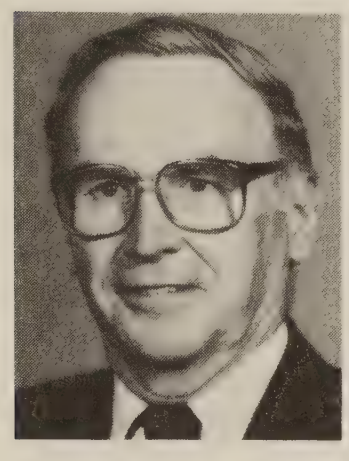
Mr. Zumbro received many honors during his 46-year career in public service. In 1946 he was designated by the State Department as an official member of the U.S. delegation to the World's Poultry Congress in Denmark; in 1948 he received the USDA Superior Service Award; in 1958 he served as technical consultant to the World's Poultry Congress in Mexico; in 1960 he received a USDA award for Outstanding Performance; in 1969 he was elected a fellow in the Poultry Science Association; and in 1972 he received the Distinguished Alumni Award from the College of Agriculture, Ohio State University.



Mr. Sam A. Moore
1908-1983
Senior Coordinator, National Poultry Improvement Plan (1961-1969)

Mr. Sam A. Moore, a native Texan, received his degree in poultry science from the Texas A&M University and immediately took a position as superintendent of the poultry farms at Washington State University in Pullman. Following that, he was employed by a commercial feed company in Spokane before going to the University of Arkansas in 1936 as an Extension poultryman. While there, he became involved with the NPIP, helping to initiate the program in that State. Following an 8-year tenure, he returned to his alma mater, continuing as an Extension poultryman for 2 years before returning to Arkansas with the State Veterinarian's office. He continued to be involved with NPIP work while in Little Rock.

Mr. Moore was chosen by USDA for a position as coordinator with the NPIP in 1948. He advanced to head the program in 1961 with his appointment as senior coordinator, a position he held until his retirement in 1969. During his tenure, many changes were made in the program and in the industry. The number of breeding flocks participating in the NPIP decreased from over 100,000 to less than 10,000, but the number of breeding birds increased by 3.5 million. This change was accompanied by a dramatic decrease in the percentage of pullorum-typhoid positive birds in candidate breeding flocks, 1.18 percent to 0.0005 percent. Through his innovative leadership, sample testing for pullorum-typhoid was initiated, *Mycoplasma gallisepticum* testing programs were started for both chickens and turkeys, and all hatcheries were handling nothing but U.S. Pullorum-Typhoid Clean products. His contributions were many and varied and have left their mark on the poultry industry.



Mr. Raymond D. Schar
1923—
Senior Coordinator, National Poultry Improvement Plan (1969-1984) (Retired)

Mr. Raymond D. Schar was born in Butler County, Pennsylvania, where he was raised on a commercial poultry farm and attended public schools. He is a graduate of Pennsylvania State University with a degree in poultry science. After being discharged from the service, he taught vocational agriculture for 4 years. In 1950 he became a poultry inspector with the NPIP for the Pennsylvania Department of Agriculture. He also was responsible for starting the Pennsylvania Random Sample Turkey Test and served as its supervisor until 1959. During his tenure with the Pennsylvania Department of Agriculture, he also produced hatching eggs for a local hatchery.

In 1959, Mr. Schar accepted a position with USDA as a coordinator of the NPIP at Beltsville, Maryland. His duties provided him with the opportunity to observe how the program was operated within and between States and how USDA could better serve as a coordinating agency. In 1969 he was named senior coordinator for the NPIP, a position he held until his retirement in 1984. During this time he helped develop new programs in the NPIP and had the privilege of chairing seven of the biennial National Plan Conferences. Mr. Schar presently serves as secretary-treasurer of the USA Branch, World's Poultry Science Association, and he was alternate U.S. Representative to the XV World's Poultry Congress and a U.S. delegate to the XVI and XVII Congresses.

Development of National Poultry Improvement Plan

Probably the greatest single factor which limited the early expansion of the poultry industry was the disease known as Bacillary White Diarrhea (BWD), caused by *Salmonella pullorum.* This disease, later called pullorum disease, was rampant in poultry and could cause upwards of 80 percent mortality in baby poultry. Poultrymen recognized the problem but were unable to cope with it until the causative organism was discovered by Dr. Leo Rettger in 1899 and a diagnostic blood test was developed by Dr. F.S. Jones in 1913.

Following these two discoveries, individual poultrymen started to test their birds for pullorum disease and eliminate the reactors from the breeding flocks. But the disease was so widespread they soon realized that if they were to be successful, a widespread, coordinated effort would be necessary. A number of States started statewide pullorum testing programs in the early 1920's; and before long, a few breeding flocks were being identified as free of pullorum.

About this same time some of the early poultrymen started to exert a conscientious effort to improve the genetic production capabilities of their stock. Even though a thorough understanding of genetics was lacking, considerable improvement was made through trapnesting programs which identified superior individual birds. This would be expanded later to include individual male matings and family selection as tools to improve production potential.

As news of the availability of better stock spread and as better transportation of baby poultry became available, largely through the U.S. mail, breeders became besieged with orders for baby poultry from all over the country. It was then more important than ever that stock be free of pullorum disease and that production capabilities be improved to even higher levels.

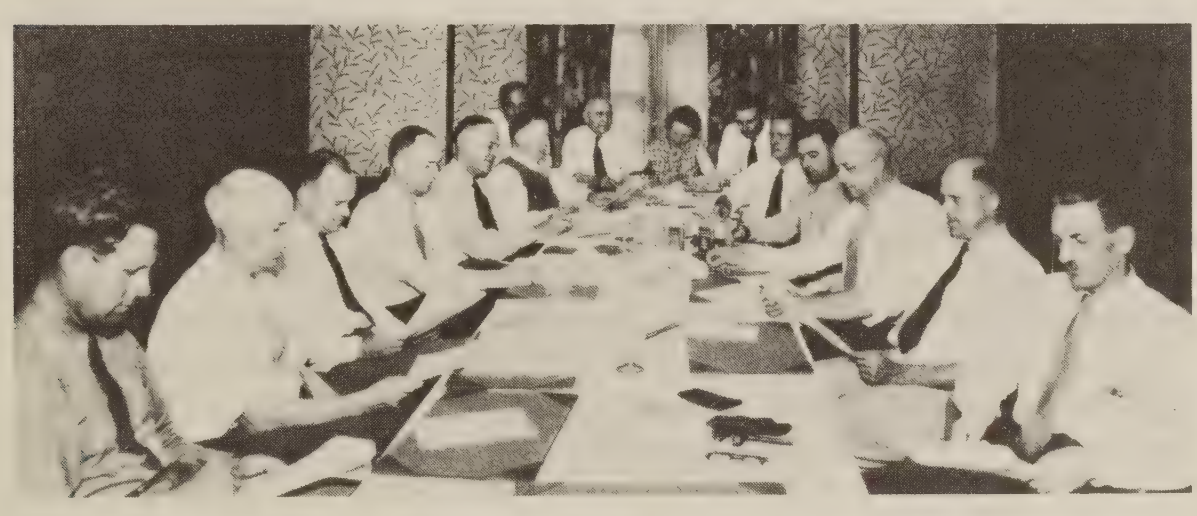
Equally important was terminology. States having pullorum testing programs devised their own criteria and terminology to identify the different degrees of freedom from the disease. Those having statewide breeding programs also used various terms which meant different things to different people. With the distribution of stock over a wide geographical area, it soon became evident that nationwide criteria and standard terminology for both breeding and disease control programs were necessary for the poultry industry to take advantage of the improvements which were being made.

In the early 1930's, members of the poultry breeding and hatching industries, through the International Baby Chick Association (IBCA), started to recognize the advantage of a national program for the improvement of poultry. It was envisioned that such a program would utilize the

good points of the individual State breeding and disease control programs and develop standard terminology which would be equally applicable in all areas of the country.

Needless to say, many varied opinions were expressed as to what areas should be covered in a national program. State poultry extension specialists and administrators of existing State improvement programs were drawn into the discussions. Since the envisioned program would require some type of Federal coordination, the USDA became involved. Committees and subcommittees were formed to hammer out details of the different segments of the emerging poultry improvement program.

Finally, after a few years, several IBCA conventions, numerous committee meetings, and countless hours of deliberations, the provisions for the first nationwide poultry improvement program were finalized in 1934. This program, which was named the National Poultry Improvement Plan (NPIP), was subsequently adopted by 47 States. These States became responsible for the blood testing and subsequent classification for various disease control programs of over 1.4 billion breeding chickens and 122 million breeding turkeys during the 50 years since the founding of NPIP.



The special terminology committee, with its advisory staff, which formulated the first draft of the NPIP at Cleveland, Ohio, in 1934. (Left to right around table): W. D. Termohlen, chief, poultry unit, AAA; Robert R. Slocum, senior marketing specialist, USDA; G. S. Vickers, Ohio; Berley Winton, AAA agent; Eric Nisson, California; Prof. J. E. Rice, New York; Reese V. Hicks, executive secretary, IBCA; D. D. Slade, Kentucky, committee chairman; Katherine Krogness, secretary to managing agent; J. A. Hannah, formerly managing agent of the hatchery code; C. N. Whittaker, Michigan, president, U.S.R.O.P. Federation; V. C. Ramseyer, Iowa; A. H. Demke, Texas; H. L. Shrader, senior extension poultry husbandman, USDA; Dr. M. A. Jull, senior poultry husbandman, USDA.

The NPIP is a voluntary cooperative State-Federal program in which approximately 90 percent of the U.S. breeding and hatching industry participates. The major role of the U.S. Department of Agriculture (USDA) is one of program coordination and supplying certain laboratory material and services. This accounts for approximately 3 percent of the total program cost. States, through a Memorandum of Understanding with the USDA, agree to provide personnel necessary to conduct blood tests and related laboratory services, make inspections, keep records, and generally supervise the program. This is estimated to account for 30 percent of the total cost of the program. The industry members participate through an agreement with their State agency and pay approximately 67 percent of the total cost.

The provisions governing the NPIP are contained in Title 9, Code of Federal Regulations (chapter 1, Animal and Plant Health Inspection Service). As needs arise for increased control measures for certain diseases or as new disease control techniques are developed, these provisions are modified to keep current with the changing requirements of the industry. They are amended through recommendations made at the biennial National Plan Conference by delegates representing the industry within their States. Except during World War II, these were annual Conferences until 1950, when they became biennial.

An important part of the NPIP provisions provides for a General Conference Committee, which is an official advisory committee to the Secretary of Agriculture. The delegates to the National Plan Conference elect seven members to this committee, one from each of the six regions and one member at large. This committee gives the industry a direct line of communication to the Secretary on matters relating to poultry health.

At present, programs under the NPIP include control of *S. pullorum, S. gallinarum* (fowl typhoid), *M. gallisepticum, M. synoviae,* and *M. meleagridis.* In addition, recommended and/or required sanitation practices and the testing and laboratory techniques for the identification of infected specimens are included in the provisions.

Some of the accomplishments of the programs of the NPIP are contained in charts, graphs, and maps in other sections of this publication. Dates when new programs were added, as well as the names of State and Federal personnel, are also included.

A copy of the rules governing participation in the NPIP, as well as other information, can be obtained by writing to the National Poultry Improvement Plan, USDA, Animal and Plant Health Inspection Service, Veterinary Services, Room 828, Federal Building, Hyattsville, MD 20782.

Growth and Progress

This section of the publication attempts to set forth some of the progress which has been made in the area of poultry production since this industry grew out of the "incidental" or "backyard" type of enterprise into nearly a $10 billion agribusiness. Obviously, many disciplines have contributed to this progress. Improvement through genetics, nutrition, physiology, health, equipment, and management are a few of the factors which have permitted the poultry industry to become such an important part of animal agriculture.

Some Selected Facts

The total value of the entire U.S. poultry industry in 1840 was $12 million.

The rate of egg production per hen increased from 93 eggs in 1930 to 174 eggs in 1950 to 246 eggs in 1983.

Feed conversion for the production of table eggs dropped from 8.4 pounds of feed per dozen eggs in 1922 to 4.1 pounds in 1983.

In 1983 it was estimated that 90 percent of the eggs produced in the United States were from hens housed in cages, with many of them in environmentally controlled facilities.

Today (1983) broilers produced in the United States are being marketed at an average live weight of 4.1 pounds at 51 days of age, with an average feed conversion of 2.05 pounds of feed per pound of live weight. In 1928 the average Rhode Island Red broiler weighed 3.8 pounds at 16 weeks of age, with a feed conversion of 13.3 pounds of feed per pound of live broiler. By 1949, a 3.4 pound broiler (New Hampshire) was being marketed at 12 weeks with a feed conversion of 12.9 pounds.

U.S. turkey production decreased from 6.5 million head in 1900 to 3.6 million in 1920 because of "blackhead," a disease caused by the protozoan *Histomonas meleagridis.*

Mature turkeys are usually marketed when hens are about 15 weeks of age and toms are between 18-20 weeks of age, depending on market needs, type of bird, and similar factors. In 1983, it took an average of 3 pounds of feed to produce a pound of live-weight turkey.

Nearly 40 percent of the U.S. turkeys produced in 1983 were used in further processing to make turkey rolls, turkey ham, salami, pot pies, and similar items.

A 30-year production comparison of ready-to-cook products and their values follows:

		1950	1983
Ready-to-cook broilers	(billion pounds)	1.40	12.3
	(million dollars)	$532	$4,873
Ready-to-cook turkeys	(billion pounds)	0.65	2.6
	(million dollars)	$269	$1,261
Ready-to-cook other fowl	(billion pounds)	1.68	0.6
	(million dollars)	$537	$152
Eggs	(billion dozen)	4.91	5.67
	(million dollars)	$1,777	$3,465

Some Selected Graphics

This figure presents certain statistics related to the participation of chicken breeding flocks in the pullorum-typhoid phase of the NPIP. Prior to 1968 all birds in participating breeding flocks were required to be blood tested. Since 1980, between 7 and 10 percent of the participating birds have been tested.

Fig. 1

National Poultry Improvement Plan

Summary of Breeding Chickens Participating

Year	Flocks (No.)	Birds Participating (Thousands)	Birds Tested (%)	Reactors	Reactors (%)
1936	9,191	4,329	100.0	158,516	3.66
1940	47,966	11,184	100.0	345,389	3.09
1950	111,422	37,237	100.0	269,115	.72
1960	37,857	37,030	100.0	6,812	.018
1970	8,340	35,890	48.9	162	.0009
1980	6,677	36,071	7.4	41	.0015

The blood testing and classifying of turkey breeding flocks for pullorum-typhoid became part of the program in 1943. The original rate of infection was considerably below that found in chicken breeding flocks. This has continued, with no positive birds being identified in candidate flocks since 1971.

Fig. 2

National Poultry Improvement Plan

Summary of Breeding Turkeys Participating

Year	Flocks (No.)	Birds Participating (Thousands)	Birds Tested (%)	Reactors	Reactors (%)
1944	2,489	982	100.0	19,616	2.00
1950	4,717	2,340	100.0	9,172	.39
1960	2,614	2,510	100.0	243	.007
1970	1,062	3,145	75.2	6	.0003
1980	725	3,257	16.4	0	.0

By the early 1970's most of the commercial type chicken and turkey breeding flocks were free of pullorum and fowl typhoid. However, there still appeared to be a reservoir of infection in the exhibition/backyard type breeding flocks. Increased emphasis was placed on the blood testing of this category of flocks.

Fig. 3

National Poultry Improvement Plan

Waterfowl, Exhibition Poultry, and Game Bird Breeding Flocks

	Participating	
	Birds	Flocks
1974-75	216,724	1,849
1976-77	274,880	2,247
1978-79	332,113	2,447
1980-81	409,177	2,769

The number of pullorum and fowl typhoid isolations have fluctuated as additional States have increased their surveillance of the exhibition/backyard type flocks and eliminated existing foci of infections.

Fig. 4

National Poultry Improvement Plan

7-Year Summary of Pullorum-Typhoid Isolations

Year	Pullorum-Typhoid Isolations	Isolations by Type of Flock				Gallinarum Isolations
		Exhibition/ Backyard	Small	Misc.	Comm.	
1975	70	62	8	—	—	6
1976	63	59	—	—	4	3
1977	29	26	—	—	3	2
1978	67	47	10	7	3	3
1979	101	87	10	4	—	0
1980	138	115	16	7	—	3
1981	83	75	4	—	4	0
1982	53	47	3	2	1	0

In 1968 the NPIP provisions were amended to permit a breeding flock to be qualified as a "U.S. Pullorum-Typhoid Clean" flock based on modified testing requirements if the entire State where the flock is located meets certain requirements. These requirements follow:

1. All hatcheries are in the Plan or equivalent program.
2. All breeding flocks are in the Plan or equivalent program.
3. All imports into the State are "U.S. Pullorum-Typhoid Clean" or equivalent.
4. All pullorum and fowl typhoid isolations are reported.
5. All pullorum and fowl typhoid isolations are investigated to determine source.
6. All flocks infected with pullorum or fowl typhoid are quarantined.
7. All exhibited poultry are blood tested or are from a pullorum-typhoid negative flock.

In 1974 the National Plan provisions were again amended to provide for the recognition of a State as a "U.S. Pullorum-Typhoid Clean State" if it had the above requirements as part of its State animal health regulations and if it were enforcing them. The interpretation was made that this amendment would be made retroactive to 1968. This would allow for im-

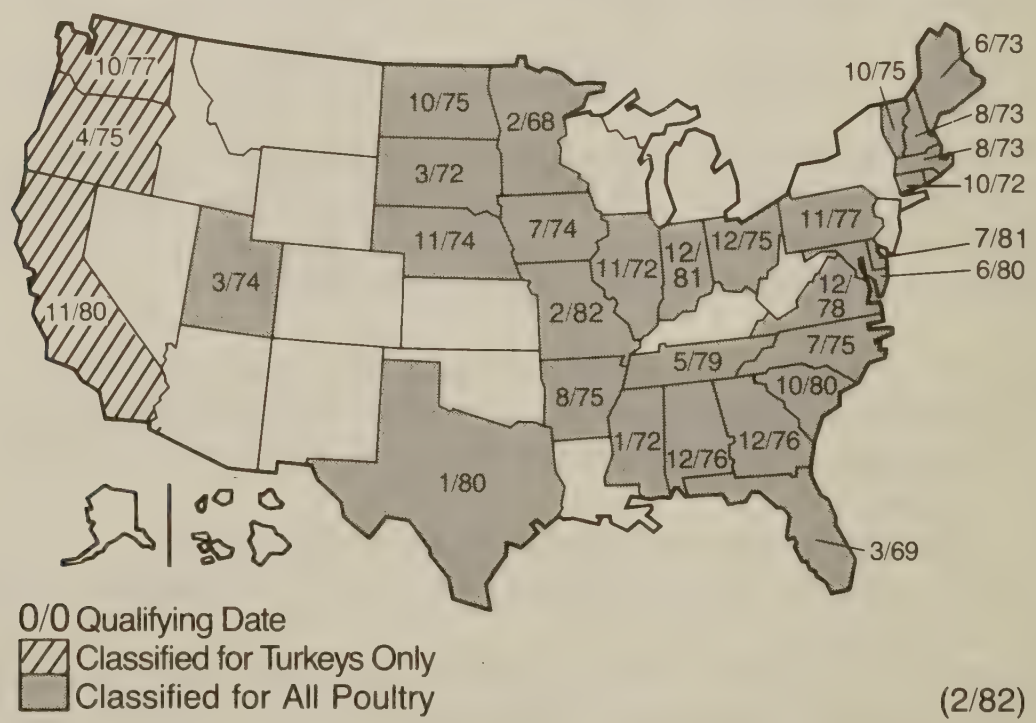
mediate recognition of any State which was implementing these regulations prior to 1974. Thus, nine States were given the status of a "U.S. Pullorum-Typhoid Clean State" at that time. Since then a total of 28 States have earned that recognition.

A similar program was simultaneously provided which would recognize States meeting the first six requirements above as they apply to turkey breeding flocks and hatcheries only. States meeting these requirements were given the status of a "U.S. Pullorum-Typhoid Clean State, Turkeys." A number of States earned this classification for turkeys and then went on to qualify for all poultry. The 28 States that qualified for all poultry and the three presently qualified for turkeys only are shown on the map below.

Fig. 5

National Poultry Improvement Plan

U.S. Pullorum–Typhoid Clean States



(2/82)

A program for the blood testing and classification of chicken breeding flocks for *M. gallisepticum* was started under the NPIP in 1966. Approximately 35 percent of the breeding chickens participating in the Plan are classified as "U.S. M. Gallisepticum Clean." A major portion of those not officially classified, particularly the multiplier meat-type breeders, is being blood tested, although the sample size being tested is not large enough to meet the requirements for an official classification.

Fig. 6

National Poultry Improvement Plan

Progress Made in the Control of Mycoplasma Gallisepticum

Turkey Breeding Flocks

	1966	1970	1975	1980
Flocks Tested	1,649	1,020	796	652
Breeding Birds (Millions)	3.7	3.1	2.9	3.0
Positive Flocks	143	1	0	1
Percent Positive	8.7	0.1	0.0	0.15

The *M. gallisepticum* control program for turkey breeding stock was started under the NPIP in 1965. Over 95 percent of the breeding turkeys participating in the Plan are classified as "U.S. M. Gallisepticum Clean."

Fig. 7

National Poultry Improvement Plan

Progress Made in the Control of Mycoplasma Gallisepticum

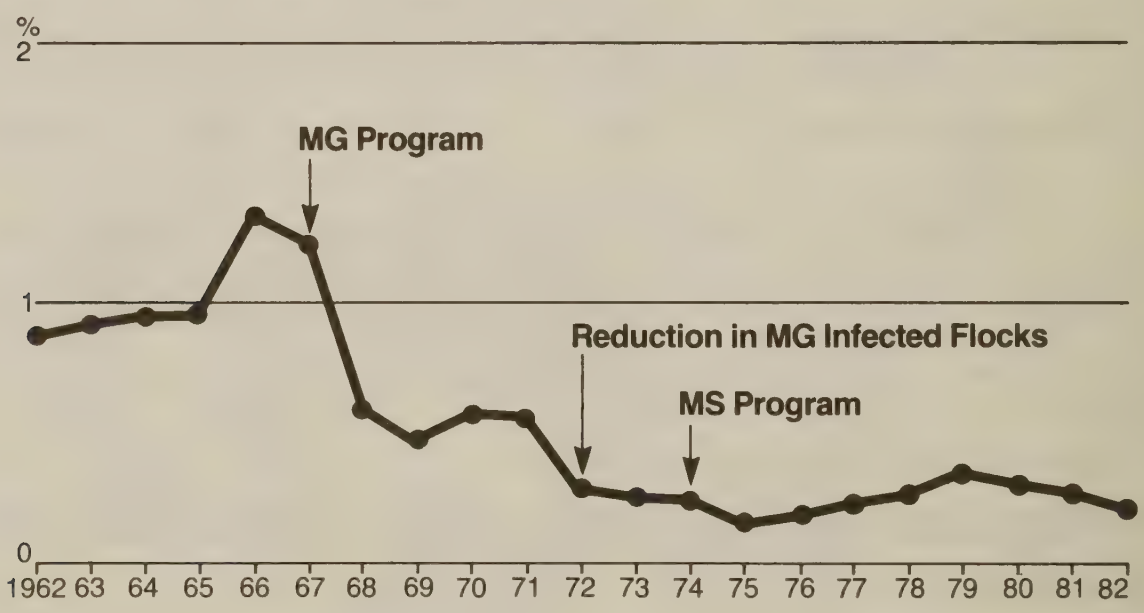
Chicken Breeding Flocks

	1970	1975	1980
Flocks Tested	1,070	1,091	1,310
Breeding Birds (Millions)	6.1	7.4	12.6
Positive Flocks	55	18	3
Percent Positive	5.1	1.6	0.23

M. gallisepticum infection is a major cause of chronic respiratory disease which manifests itself as airsacculitis when complicated by some other infection. Following the implementation of the *M. gallisepticum* control program under the NPIP, there was a major decrease in the percentage of broilers condemned because of airsacculitis in the processing plant. *M. synoviae,* for which a testing program under the Plan was started in 1974, also can cause airsacculitis in poultry. Approximately 35 percent of the broiler breeding stock is presently classified as "U.S. M. Synoviae Clean" under the Plan.

Fig. 8

Percent Condemnation for Airsacculitis by Year-Young Chickens



A program giving recognition to States which have met certain requirements in the control of *M. gallisepticum* in turkey breeding flocks was made available in 1980. The requirements which a State must meet to attain the "U.S. M. Gallisepticum Clean State, Turkeys" status are the same as the first six listed previously for the "U.S. Pullorum-Typhoid Clean State" program, except that *M. gallisepticum* is substituted for pullorum and typhoid.

Fig. 9

U.S. Mycoplasma Gallisepticum Clean States– Turkeys

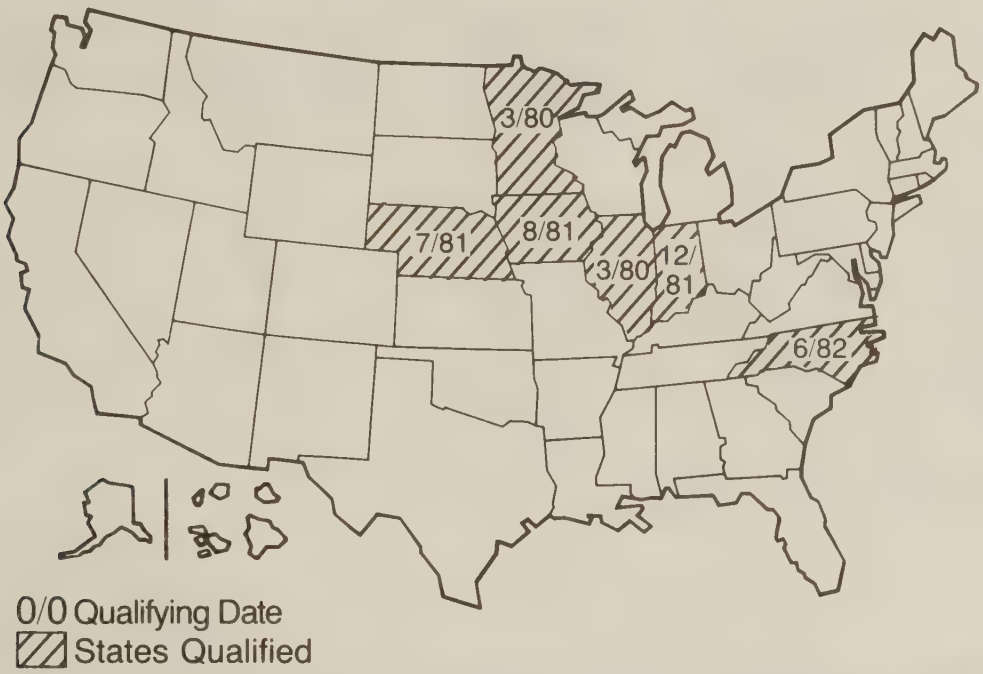


Fig. 10

U.S. Production of Poultry Products

Year	Broilers (Millions)	Layers (Millions)	Turkeys (Millions)	Eggs (Billions)
1930	34 (1934)	714	17	33.5
1940	132	538	34	39.6
1950	632	432	44	58.9
1960	1,796	351	82	61.4
1970	2,987	313	116	68.2
1980	3,964	288	165	69.7
1983	4,184	277	170	68.1

Fig. 11

U.S. Production of Chicks and Poults
(Chicks and Poults Hatched)

Year	Chicks		Poults	
	Broiler type	Egg type	Heavy type	Light type
	(Millions)	(Millions)	(Millions)	(Millions)
1930	672[1]		17[2]	
1940	859[1]		34[2]	
1950	1,533[1]		46[2]	
1960	1,965	480	83	12
1970	3,189	571	116	14
1980	4,280	485	172	17
1983	4,449	407	176	6

[1]Broiler and egg type combined.
[2]Heavy and light turkeys combined.

Fig. 12

U.S. Per Capita Consumption of Poultry Products

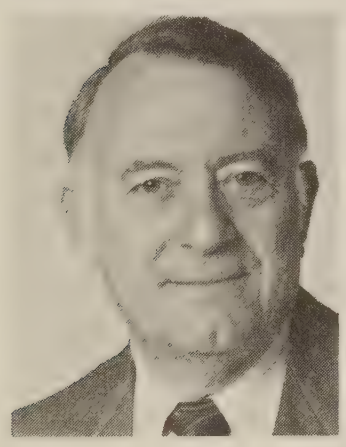
Year	Chickens	Turkeys	Eggs
	(pounds)	(pounds)	(number)
1930	21.5	1.8	329
1940	18.0	3.6	316
1950	20.6	5.0	389
1960	28.1	6.2	320
1970	40.4	8.0	309
1980	50.0	10.5	272
1983	54.3*	11.2*	259*

*Preliminary Estimate

A Few of the Leaders

No progress can be attained in any endeavor without people. In this section of the publication on poultry improvement, a brief account of a few of the contributing "giants" is given. Because of limited space, it is not possible to include all of those who have left their mark on this prolific segment of animal agriculture. However, an attempt has been made to include some of the individuals who represent each of the disciplines involved in the improvement of poultry. This includes breeders of primary egg- or meat-type stock, hatchery owners, research scientists in the fields of genetics and pathology, veterinarians, educators, and administrators. Apologies are extended to those many stalwarts who were not included.

Note: In an effort to conserve space, the following abbreviations are used in these biographical sketches: FFA, Future Farmers of America; NPIP, National Poultry Improvement Plan; R.O.P., Record of Performance; U.S.R.O.P., United States Record of Performance Federation; USDA, United States Department of Agriculture.



Dr. Henry E. Adler, 1917-1983
Professor of Veterinary Medicine, University of California, Davis, California

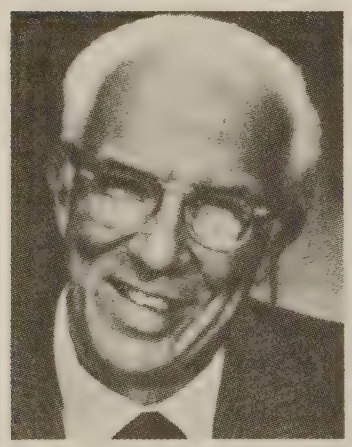
Dr. Henry E. Adler was a respected scientist and teacher of avian medicine. Among his many contributions was the development of the first effective bacterin against erysipelas in turkeys in the early 1950's. Of even greater importance was his development of an agglutination test for the detection of *Mycoplasma gallisepticum* (S6) infection in chickens and turkeys, which contributed greatly to the eradication of this infection from basic breeder stock. His studies on egg sanitation and hatchery management contributed significantly to control of egg-borne diseases such as salmonellosis and coli-septicemia. His research was recognized through a number of awards including the Newman International Poultry Association Award (1957), the National Turkey Federation Award (1960), and the Corn Products Company International Award (1970).

Dr. Adler received his D.V.M. degree from Washington State University in 1946, and his Ph.D. degree from the University of California, Davis, in 1955, where he remained on the faculty until he retired in 1982. He was a member of a number of scientific societies.

Mr. M. E. Atkinson,
1875-1941
Originator of Hollywood Strain of White Leghorns

Mr. M. E. Atkinson was the founder, manager, and half owner of Hollywood Poultry Farm and originator of the Hollywood high egg producing strain of Single Comb White Leghorns. He was born at Port Discovery, Washington, December 27, 1875. Mr. Atkinson received a common school education and had valuable early training as fire and marine insurance salesman in offices of his father at Seattle. During the height of the Alaska gold period, 1901-1909, he conducted a large mercantile business at Nome.

In 1911-1912, practically without capital, he started in the poultry business on a small scale, having had no previous experience with domestic fowl. Within the next 10 years, he increased the size of his breeding flock to over 10,000 layers and increased production by 5 dozen more eggs per hen. The demand for breeding stock from this high-producing strain of White Leghorns produced enough profit to enable Mr. Atkinson to purchase half interest in another large Washington State poultry farm which in 1922 was doing in excess of $100,000 worth of business.



Mr. Monroe C. Babcock,
1907-
Early Breeder of White Leghorns (Retired)

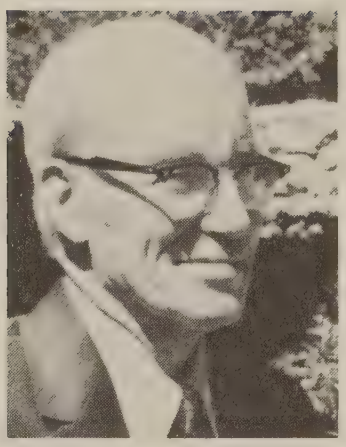
Mr. Monroe C. Babcock, a native New Yorker, graduated from Cornell University in 1930 and worked for a year as an R.O.P. inspector with the New york State Poultry Improvement Association. This was followed by a 4-year term as secretary-manager of the New York State Cooperative Poultry Breeders, Inc. His lifelong love for chickens made his move to establish his own breeding farm an easy transition. His worldwide reputation for honesty and integrity and his homespun philosophy greatly contributed to the publicity and acceptance of his White Leghorn breeding stock throughout most industrialized and emerging nations of the world.

The Babcock strain of White Leghorns established outstanding records in egg-laying contests and random sample tests. These White Leghorns held the world record in the Western New York test in 1944 and twice won the USDA Combined Summary of Random Sample tests in 1968 and in 1969. Mr. Babcock's willingness to use innovative approaches to poultry breeding is well known. He has written many sales letters, circulars, and catalogs containing tips on practical poultry management. His interest in serving both the poultry industry and civic organizations has resulted in many assignments and recognitions. He was named New York State Poultryman of the Year in 1978 and elected to the Poultry Hall of Fame in 1980.

Mr. L. C. Beall, Jr.,
1876-1976
Early Breeder of White Leghorns

Mr. L. C. Beall, Jr. of Vashon, Washington, was a White Leghorn breeder of worldwide fame during the early part of the 20th century. Before leaving his ancestral acres in Maryland, which later became the USDA Beltsville Research Center, he was dabbling in poultry. Arriving on the west coast, he became serious about breeding for egg production and in 1916 and 1917 purchased foundation stock from the already well-known breeder, Douglas Tancred of Kent, Washington.

Mr. Beall's stock was soon making records in egg-laying contests around the country. He began trapnesting his birds in the Washington R.O.P. program in 1923 and later operated under the USDA Standard Breeding Plan and the rules of the U.S.R.O.P. Federation. With the organization of the National Plan, he immediately became a U.S.R.O.P. breeder. His shipments of breeding stock were sent worldwide. Important among them were 163 birds sold to the Government of Japan in 1930. Mr. Beall was involved in many community, State, and national organizations and held numerous offices.



Dr. Gordon E. Bearse, 1907-
Poultry Scientist, Washington State University (Retired)

Dedication to the poultry industry is the key word in introducing Dr. Gordon E. Bearse. He came to Washington State in 1929 from Massachusetts and quickly established a close working relationship with the poultry industry. This relationship was further strengthened by Dr. Bearse's choice of a series of research projects closely related to poultry industry needs. He pursued this course with distinction for about 43 years until retirement in July 1972. He did not retire from the poultry industry, however, since he is still active in volunteer industry affairs.

Dr. Bearse's dedication and congenial working relationship with colleagues at Washington State University, and his publication of valuable research papers endeared him to them and to national and international research workers in poultry. This was publicly proclaimed when Dr. Bearse was elected president of the Poultry Science Association, Inc., for the years 1959 to 1960. Dr. Bearse was a strong supporter of leading poultry industry and research organizations and held offices in many of those. He is still very active in community affairs. The poultry industry, the NPIP, community services, and many others have benefited from their association with Dr. Bearse.

Dr. Fred R. Beaudette, 1897-1957
Poultry Pathologist, Rutgers University

Dr. Fred R. Beaudette received his D.V.M. degree at Kansas State College, staying for several years as an instructor in bacteriology. He then went to Rutgers University in New Brunswick, New Jersey, as a poultry pathologist, where he conducted most of his research on the various aspects of poultry diseases.

He was the first to report in 1930 that infectious laryngotracheitis, which was then called infectious bronchitis, is caused by a filterable virus. Two years later, he found that vaccination by application of the virus to

the cloacal membrane is safe and effective if properly done. When Newcastle disease was first observed in the United States in California, Dr. Beaudette appears to have been the first person to identify the virus. He subsequently developed an effective vaccine for this disease. Work on fowl pox started early in the 20th century; however, in 1949 Dr. Beaudette reported that there were two other avian pox viruses; namely, the pigeon pox virus and the canary pox virus. This knowledge permitted a pigeon pox vaccine to be developed which could be used for laying hens with no adverse effects. Late in his career, he became involved with research on psittacosis.

Dr. Beaudette extensively published the results of his work. He received many awards and honors, including being elected to the Poultry Hall of Fame in 1959.

Dr. William A. Billings, 1888-1970
Extension Veterinarian, University of Minnesota

Dr. William A. Billings was one of the best known authorities on turkey health and production in the United States during the 30 years preceding his retirement in 1956. Upon earning his D.V.M. degree from Cornell University in 1918, he accepted a position as pathologist with the University of Minnesota and later as Extension veterinarian, a position he held until his retirement. Dr. Billings was a very strong advocate in promoting the use of the results of scientific research in practical turkey production.

Dr. Billings was able to speak and write in such a way as to attract and hold his audience. His down-to-earth and sometimes humorous articles were published in many State and national publications. He spoke at turkey meetings in nearly every State and in Canada. It became a tradition for him to be on the program at the National Turkey Federation conventions. His textbook on diseases was used extensively. He was instrumental in starting the Minnesota Turkey Growers Association, the largest organization of its kind in the United States.

At the time Dr. Billings entered this field, turkeys were raised almost exclusively in very small flocks as minor sidelines to the major farm enterprises. As improvements in genetics and nutrition were made and as disease control techniques improved, the industry advanced to the state-of-the-art we know today.

Mr. W. D. Buchanan,
1871-1957
Extension Poultryman,
Washington State University

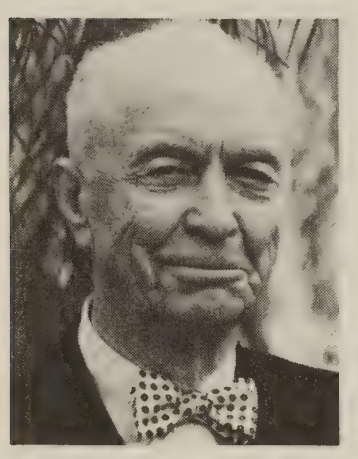
Mr. W. D. Buchanan was a commercial egg producer in the Tacoma, Washington, area in the mid-1910's, producing 30 cases of eggs per week. This was considered a large operation at the time. During this time he and men like Professor Linkletter, superintendent of Western Washington Experimental Farm; W. H. Paulhamus, State senator and manager of Puyallup and Sumner Berry Co-op Association; and George Shoup, experiment station poultryman, were instrumental in laying the foundation for the Washington Egg and Poultry Co-op Association.

In 1921, Mr. Buchanan was named as Extension poultryman at the Washington State College. During a meeting of interested poultrymen and allied persons in Seattle in 1922, the Washington Egg and Poultry Co-op Association was formally established with Mr. Buchanan being named as manager. During this same meeting, the Washington Accredited Hatchery Association was formed, providing another important link in efforts to aid and standardize the breeding and hatching segments of the industry. Mr. Buchanan represented the Washington State College on the association's board of directors and was named its first supervisor.

Dr. Ben R. Burmester, 1910-
Director, USDA Regional
Poultry Research Laboratory,
East Lansing, Michigan (Retired)

Dr. Ben R. Burmester, a California native, received his Ph.D. at the University of California and his D.V.M. at Michigan State University. After a short period at teaching, he accepted a position in 1940 as a physiologist at the USDA Regional Poultry Research Laboratory in East Lansing, Michigan. He worked there as a research biologist and as director until his retirement. A major portion of his work was concerned with lymphoid leukosis, a disease which has plagued the poultry industry from its infancy.

Dr. Burmester's major contributions include the determination that lymphoid leukosis is caused by a virus and that it is possible to transmit it from the dam through the egg to the chick. He further demonstrated the passive immunity in chicks from dams that have been inoculated with the virus, and he was able to develop resistant strains of chickens. He and his co-workers determined the cause of Marek's disease, which subsequently permitted the development of a successful vaccine. Through his recognition as an international authority on avian leukosis, he was awarded the USDA Superior Service Award. He was elected to the Poultry Hall of Fame in 1980.



Dr. Theodore C. Byerly, 1902-
Scientist and Administrator, USDA (Retired)

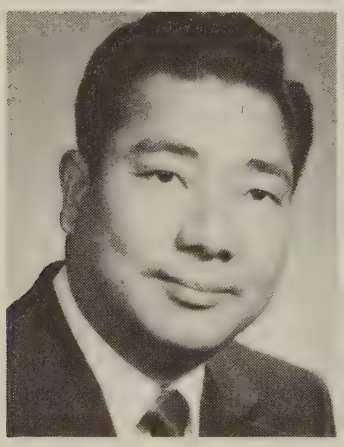
Dr. Theodore C. Byerly was educated in Iowa, receiving his Ph.D. degree from the University of Iowa in 1926. Following several years of university work, he became directly involved with poultry when he accepted a position as a physiologist with USDA in 1929. He assumed increasingly responsible positions with the Department, leading to his appointment as administrator of the Cooperative State Research Service in 1962, and assistant director of Science and Education in 1969. He received numerous awards including the USDA Superior Service Award in 1953 and the USDA Distingushed Service Award in 1965, as well as being made a fellow of the Poultry Science Association. He was elected to the Poultry Hall of Fame in 1983.

Dr. Byerly's contribution to the poultry industry includes leadership in research, training of graduate students and scientists, research in embryonic growth, efficiency of feed utilization, broodiness, light and reproduction, and hatchability of chicken and turkey eggs. As a leader of team research in USDA, he and his staff developed the famous Beltsville turkey. He also provided leadership to a research team that identified vitamin B_{12}.

Mr. Charles David Calhoun, 1916-
Hatcheryman, Texas Poultry Industry Leader (Retired)

Mr. Charles David Calhoun was born on his family's farm near Montrose, Missouri, where he grew up in the family poultry and hatchery business. He graduated from Central Methodist College in Fayette, Missouri, with a degree in biology; and joined his father and brother in the operation of the hatchery which served mail-order customers across the Nation. He joined the Navy in 1942, advanced to Lt. Commander, and commanded a patrol torpedo boat with combat in the Mediterranean and Pacific theaters before being relieved of active duty in January 1946.

Following World War II, Mr. Calhoun rejoined the family poultry business where, in 1954, the decision was made to establish a branch hatchery in Tyler, Texas. Mr. Calhoun managed this branch hatchery and became active in State industry organizations. During the next 20 years, he served at various times as director of the following organizations: Texas Broiler Council, Texas Egg Council, Texas Turkey Federation, American Poultry and Hatchery Federation, and Poultry and Egg Institute of America. In 1973, he was awarded the Golden Feather Award in recognition of his service to the Texas Poultry Federation and its affiliates.

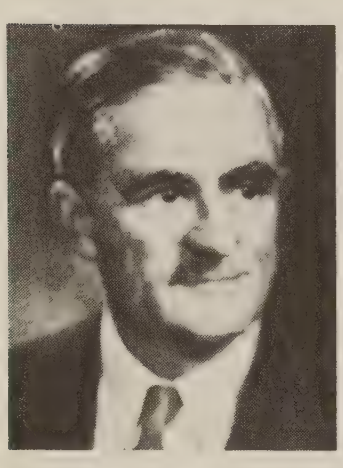


Dr. Timothy S. Chang, 1925-
Professor, Department of Animal Science, Michigan State University

As a graduate assistant at Ohio State University, Dr. Timothy S. Chang worked in the laboratory identifying salmonella from suspect specimens submitted by the Ohio Poultry Improvement Association. In 1953, he inoculated 150 chickens with *Salmonella typhimurium* antigen to provide positive specimens for short-course students. After 1 week, eight of these inoculated chickens gave no sign of antibody production. While the removal at 1 week of age prevented production, they were reinoculated, but again failed to produce antibodies. In checking the background of these 150 birds, it was discovered that the eight which had produced no

antibodies had their bursa of Fabricius removed as part of another research project.

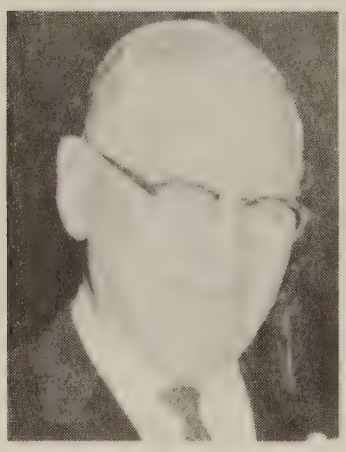
Subsequent experiments showed that the removal of the bursa from 10-week-old chickens did not affect their antibody production, proving that the role of the bursa of Fabricius was to produce antibodies against invading organisms at an early age. Through the results of this and other research by Dr. Chang, Dr. Bruce Glick, and others, the chicken is now known to possess a highly effective immune system. Researchers in human medicine were made aware of the anomalous organ, and gradually the picture of the immune system in both beast and man evolved.



Mr. Andrew Christie,
1888-1964
Early Breeder of New Hampshire and Barred Plymouth Rock Chickens

Mr. Andrew Christie was one of the early poultry breeders to recognize the need for a specialized type of chicken to meet the requirements of the infant broiler industry in the United States. After starting his adult career as a clothing and shoe salesman, his love of the land prevailed and he purchased his first farm, three-quarters of an acre at Kingston, New Hampshire, in 1921. From this humble beginning with three small brooder houses and 300 pullets, the Christie Poultry Farms grew to 10 farms containing 1,500 acres and housing 150,000 New Hampshire and Barred Rock breeders.

Mr. Christie was a partial believer in Charles Darwin's theory of survival of the fittest. Luther Burbank was the first to follow a plant breeding program where mass production was used for selection of breeding stock. Mr. Christie followed this same procedure in developing his lines of poultry. Early in his breeding program, he would discard 90 percent of the chickens started as potential breeders. The ones which he kept were selected for both vigor and type. The success of this system was evident from the demand for Christie stock from the fledgling broiler industry. The word "Spizzerinktum" which was copyrighted and used to describe his stock, quickly became synonymous with Mr. Christie.



Mr. Hobart Creighton,
1896-1976
Poultry Breeder, Legislator, and Government Official

Mr. Hobart Creighton of Creighton Brothers in Warsaw, Indiana, was one of the early R.O.P. breeders and an innovator and developer of integrated poultry production ideas. He, along with his brother Russell, formed the Creighton Brothers poultry farm at Warsaw, Indiana, in 1923, which was to become one of the largest poultry farms in the United States. He served as a legislator in the Indiana General Assembly, and in 1935 he was the author of legislation establishing the Baby Chick Department, Indiana State Poultry Association, Inc., as the Official State Agency for the administration of the NPIP. He was elected to the post of secretary-treasurer of the U.S.R.O.P. Federation from 1938 to 1940 and was president from 1941 to 1946.

Mr. Creighton served during World War II as a special assistant to the Secretary of Agriculture and was involved in many international development activities after the war. He was very active in the development of the Poultry and Egg National Board, serving as its president in 1936 and 1937. He was honored by the Indiana poultry industry in 1953 by being the recipient of the Indiana Golden Egg Award.

Dr. John Paul Delaplane,
1906-1957
Researcher and Administrator, Texas A&M University

Dr. John Paul Delaplane, a native of Ohio, received his D.V.M. degree in 1929 from Ohio State University. He engaged in research and teaching at Rhode Island State College and the Texas Agricultural Experiment Station until, in 1951, he was appointed professor and head of the Department of Veterinary Microbiology at Texas A&M College.

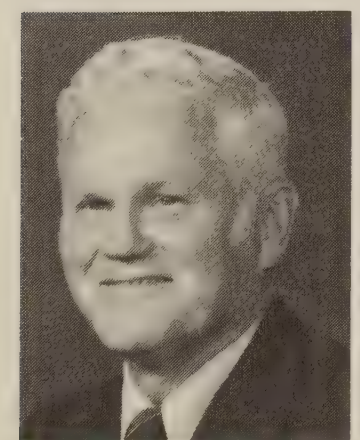
Dr. Delaplane began a professional career in poultry diseases in 1931 and supported the NPIP from its infancy. He was the first to isolate mycoplasma from infected chickens and turkeys, the first to show the etiology of "roup" in chickens, and the first to develop a successful coc-

cidiostat (sulfaquinoxaline). He was leader of the team that first recognized ornithosis in turkeys and did much of the research that gave us our present knowledge of this disease. He did significant research on Newcastle disease, infectious bronchitis, and enterohepatitis. His intense interest "spilled over" to many young men who are now highly qualified teachers and researchers in poultry diseases.

Mr. W. K. Dyer, 1892-1962
Executive Secretary, Minnesota Poultry Improvement Board

Mr. W. K. Dyer was the major force in establishing the breeding stages of the NPIP in Minnesota. He was a determined, dedicated worker for the improvement of the poultry industry. Beginning his work in 1931, he immediately organized a supervised breeding program to provide breeding cockerels as the quickest method of improving egg production in Minnesota. His leadership resulted in 17 breeders becoming involved in the R.O.P. program, of which 3 received national recognition. They were Ghostley's Leghorns, Blue Diamond White Rocks, and Edmonds Black Australorps.

Under Mr. Dyer's leadership, nearly all the hatcheries in Minnesota were under the Plan and using R.O.P. cockerels. He understood the breeding value of these R.O.P. cockerels and what they meant to the upgrading of the hatchery chick. He worked hard for over 25 years and his insistence on statewide participation in the National Plan resulted in an increase in egg production in Minnesota from 96 eggs in 1931 to 213 eggs per hen in 1958, the year he retired. His determined, dedicated, honest administration of the improvement program made him a person who should be listed along with the major contributors to poultry improvement.



Dr. Samuel Allen Edgar, 1916-
Professor of Pathology, Auburn University

Dr. Samuel Allen Edgar was born in Stafford, Kansas. He received the

A.B. degree from Sterling College, the M.S. degree from Kansas State University, the Ph.D. degree from the University of Wisconsin, and an honorary Sc.D. from Sterling College. Dr. Edgar has aggressively attacked some of the most costly diseases of poultry through his research program at Auburn University and through consultation with the poultry industry throughout the world.

The primary target of his research, coccidiosis, was the limiting factor in the early growth of poultry being raised in confinement. Major contributions to the control of protozoan parasites included the development of the only vaccine against all species of chicken coccidia, current development and testing of a turkey vaccine, discovery and classification of a new species of avian coccidia, basic characterization of several previously described species, and extensive work in the area of chemical control of coccidiosis.

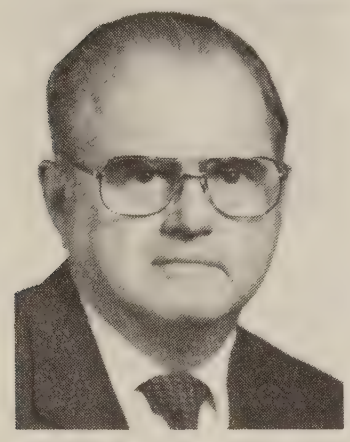
Dr. Edgar's work with external and internal parasites and other contagious diseases of poultry contributed to the poultry industry's ability to efficiently produce a wholesome product and to control losses due to condemnations in the processing plant. Early work by Dr. Edgar and his association with the Federal Inspection Service contributed to the development of workable guidelines of inspection.

Dr. David W. Francis, 1918-
Professor Emeritus of Poultry Science, New Mexico State University

Dr. David W. Francis worked many years with poultry before earning a Ph.D. degree from the University of Maryland in 1955. Following this, he assumed a position as assistant professor, Department of Poultry Husbandry, New Mexico State University (NMSU). He was made department head in 1958, a position he held until 1977. He retired from NMSU in 1981 after administrative, academic, research, and extension assignments.

Dr. Francis worked closely with the State veterinarian's office and the USDA Animal and Plant Health Inspection Service. He was a consultant for the New Mexico Department of Agriculture, and his extensive university work covering poultry management, physiology, and diseases resulted in senior or junior authorship of more than 110 publications. He is a member of many academic and professional societies and has received numerous awards and recognitions. Dr. Francis was elected a fellow of the American Association for the Advancement of Science and received the 1968 Distinguished Research Award from the NMSU College of

Agriculture and Home Economics, and Diploma de Honor el Merito, Asociacion de Avicultores del Paraguay in 1970. He served as New Mexico State Contact Representative for the NPIP, 1970-1981.



Mr. Doyle H. Free, 1920-
General Manager, Nebraska Poultry Industries, Inc.

Mr. Doyle H. Free has always been involved in agricultural pursuits in his native State, Nebraska, except for a 6-year military tour during and following World War II. In 1950 he was appointed general manager of the Nebraska Poultry Industries, a position he holds today. In conjunction with this duty, he is executive secretary of the Nebraska Poultry Improvement Association, the Nebraska Egg Council, the Nebraska Turkey Federation, and the Nebraska Allied Poultry Industries. He is also chief, Poultry and Egg Division, Nebraska Department of Agriculture. In addition to the above duties, Mr. Free was named as an NPIP inspector in 1950 and assumed the role of State coordinator of this program in 1955.

Under Mr. Free's leadership, both the chicken and turkey breeding flocks and hatcheries in Nebraska met the requirements leading to the State being recognized by the USDA as a "U.S. Pullorum-Typhoid Clean State" in 1974. A similar set of requirements were met by the Nebraska turkey industry in 1981 and the State earned the status of a "U.S.M. Gallisepticum Clean State, Turkeys." Mr. Free has been influential in helping to write various pieces of legislation favorable to poultry and agriculture in general and in having them enacted by the Nebraska Legislature. He was elected to the Nebraska Poultry Hall of Fame in 1982 and to the Nebraska Hall of Agriculture Achievement in 1983.

Dr. E. M. Funk, 1899-
Professor Emeritus, Poultry, University of Missouri

Dr. E. M. Funk was born on a farm near Annapolis, Missouri. After completing his public education and receiving his B.S. and M.A. degrees

from Missouri schools, he attained his Ph.D. from the University of Wisconsin. Following employment as a high school vocational agriculture teacher, poultry husbandry teacher in a veterans school, and professor at two universities, he became chairman of the Department of Poultry Husbandry at the University of Missouri. During a portion of this time, he also founded and operated two hatcheries in Missouri. In 1969, he was appointed Professor Emeritus.

Dr. Funk headed the work of the NPIP in Missouri from 1935 to 1972 and served as secretary of the Missouri Poultry Improvement Association for 30 years. He coached 14 collegiate poultry judging teams, two of which were national winners. He authored several books and numerous circulars, bulletins, and papers on poultry. Many honors have been bestowed on Dr. Funk during his long career of public service. He has served as chairman and director of many industry and government boards, associations, and committees. Perhaps the highest recognition of all of his contributions to the poultry industry was through his election to the Poultry Hall of Fame in 1968.

Mrs. Freda Gandler
Hatchery Operator and Trade Organization Leader

Mrs. Freda Gandler has been a familiar leader in the poultry industry for over 50 years. She grew up in the downtown Seattle market area and learned selling at an early age. She first became involved in the poultry industry through her marriage to a hatchery owner. After her husband's death, she took over active management of the hatchery, but after a few years moved to nearby Kent, Washington, where she built a large modern hatchery. From there, she hatched and supplied chicks to much of the northwest poultry industry.

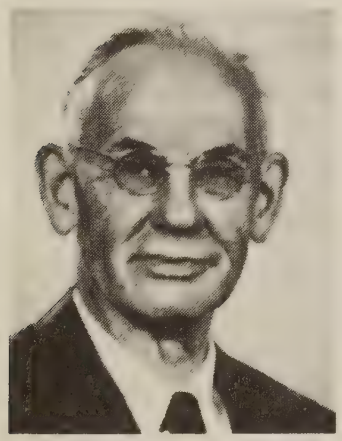
Mrs. Gandler's main contribution to the poulry industry has been as a catalyst. She has consistently supported poultry industry organizations and has inspired her associates to do likewise. Since 1931, Mrs. Gandler has had continuous membership and active participation in the International Baby Chick Association, American Poultry and Hatchery Federation (APHF), and Poultry and Egg Institute of America. She served as a director of APHF from 1952 to 1963. When the Poultry and Egg National Board was organized in the early 1940's, she took an active part in helping to finance and manage its affairs. One of Mrs. Gandler's close associates has best summed her contribution to the poultry industry as follows: "She has given a great deal of herself to the poultry industry."

Dr. George F. Ghostley,
1889-1965
Breeder of High Production
White Leghorns

Dr. George F. Ghostley was the founder, owner, and president of Ghostley's Poultry Farm, Anoka, Minnesota. He bred and developed one of the most outstanding strains of Leghorns in the R.O.P. program. He started his breeding program in 1918 and joined the R.O.P. program as soon as it became available in Minnesota in 1932. He qualified more White Leghorn pullets for U.S.R.O.P. than any other breeder. As early as 1945, egg production of qualified pullets averaged 277 eggs. In 1949, 20 percent of the qualifying pullets laid over 300 eggs.

Dr. Ghostley was fair, honest, and delivered only quality chicks to his customers. His breeding efforts have made a lasting contribution to the industry as the Ghostley bloodlines contributed to the genetic base of much of our present-day egg production stock.

Dr. Ghostley served on the Minnesota Livestock Sanitary Board for 8 years. He was President of R.O.P. Association. He received the outstanding Alumnus Award from the University of Minnesota and was elected to the Poultry Hall of Fame in 1965.



Dr. Hubert D. Goodale,
1879-1968
Research Geneticist

Dr. Hubert D. Goodale obtained his Ph.D. degree in zoology at Columbia University in 1913. Prior to that, he had managed one of the first genetics laboratories at Stamford, Connecticut, and was a research investigator at Cold Spring Harbor, New York. Following the earning of his Ph.D. degree, he joined the Massachusetts Agricultural Experiment Station in Amherst, where he carried out his experimental work in analyzing egg production records by breaking them down into component parts. This system was subsequently adopted by many breeders in their quest for higher egg production.

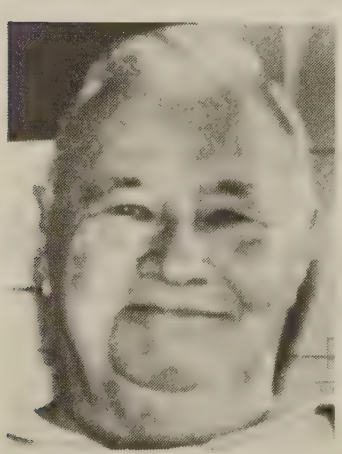
Dr. Goodale left the Experiment Station in 1922, and joined the staff of Mount Hope Farm, Williamstown, Massachusetts, as a geneticist. Here

he was able to expand his principles of genetics through research with dairy animals and the establishment of colonies of mice to explore the amount of change possible through a selection program. The knowledge which evolved through this work was put into practice in improving the Mount Hope strain of White Leghorns. This strain was very prominent in the mid-1900's and formed the basis for the establishment of numerous other strains during this period. Mount Hope blood is probably still in some of today's egg production stock.

Mr. Herman W. Halbach,
1861-1920
Early Breeder of Dual Purpose White Plymouth Rocks

This might appropriately be called a biographical sketch of the Halbach family, since five generations are involved. Mr. Herman W. Halbach, the patriarch of the family, ran a general store in Waterford, Wisconsin. Bartering played a part in business in the late 1800's, and Mr. Halbach became the owner of some White Rocks. He set out to improve his flock by purchasing or trading for birds with better economic qualities as well as good breed characteristics. It was not easy to attain the goal of improving a bird in three areas; namely, egg production, meat quality, and desirable show characteristics. However, considerable progress was made, and the Halbach White Rock soon established its place in the poultry industry. Mr. Halbach's son, William, carried on where his father left off, adding other breeds; today Mr. Harry Halbach, a grandson of Herman, has over 100 different prize-winning breeds and varieties on the original Halbach farm.

The present Halbach farm and hatchery provides many of these breeds and varieties to exhibitors in the United States and Canada. Mr. Harry Halbach also is a well-known, licensed American Poultry Association (APA) judge. His son Jeff also raises bantams and is a licensed APA judge. His children appear to be following in the same family tradition.



Dr. C. M. Hamilton, 1902-
Poultry Veterinarian, Western Washington Research and Extension Center (Retired)

Dr. C. M. (Stub) Hamilton was closely associated with poultry improvement work in the State of Washington during his tenure of 40 years in Puyallup as a poultry veterinarian at the Western Washington Research

and Extension Center of Washington State University. Dr. Hamilton was born in Topeka, Kansas. He grew up in Colorado and Wyoming and received his D.V.M. degree in 1927 from Colorado State University.

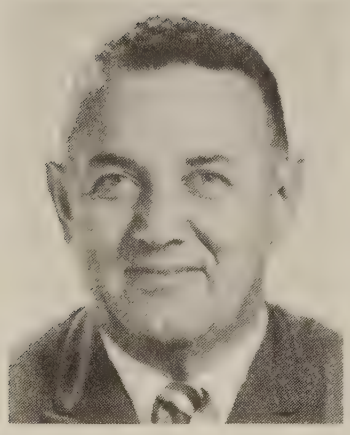
He worked extensively to improve poultry health through research and service work related to such problems as pullorum, leukosis, and respiratory diseases.

Dr. Hamilton was a member of the American Veterinary Medical Association, the Washington State Veterinary Medical Association, and the Southern Puget Sound Veterinary Medical Association. He served as chairman of the Western Poultry Disease Workers Conference and the Western States Poultry Technical Workers Committee. He also served on the Bureau of Animal Industry Committee on Standardization of Pullorum Disease Antigens. He belonged to the Poultry Science Association, Kiwanis (president 1939), Alpha Psi, Sigma Chi, and the Elks.

Mr. Henry J. Hansen,
1899-1981
Pioneer Breeder-World Renown
White Leghorns

Mr. Henry J. Hansen was an early day White Leghorn breeder of worldwide renown. During his career, he served in active positions in many agricultural and civic organizations. Among them were: U.S.R.O.P. Federation (national president, 1950); Washington Poultry Improvement Association; NPIP; American Poultry and Hatchery Federation (director, 1957-59); Washington Poultry Industry Association (director and president); and Western Farmers Association (director 1937-67 and president 1961-67). In addition, he was a member of World's Poultry Science Association, life member of the American Poultry Historical Society, and charter member of the Washington Junior Poultry Exposition.

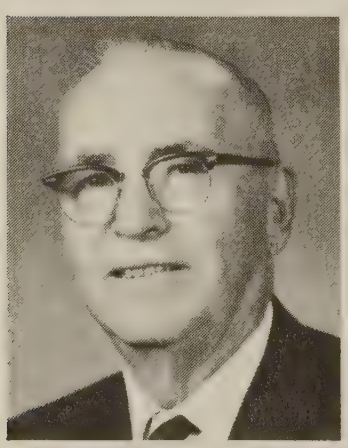
Mr. Hansen's special assignments were many. Important among these were his appointments as an official member of the U.S. delegation to World's Poultry Congresses, and advisor to Washington State University, Washington State Department of Agriculture, and USDA. He received numerous awards during his half century of service, among them were the Golden Award of the Pacific Egg and Poultry Association and awards from the Western Farmers Association and the Washington Poultry Industry Association.



Mr. Arthur J. Heisdorf,
1912-
Poultry Breeder, Pioneered Reciprocal Recurrent Selection System (Retired)

After graduating from the University of Wisconsin in the early 1930's, Mr. Arthur J. Heisdorf gained experience in the poultry industry as a geneticist for Kimber Farms in California. While there, he developed some breeding theories, and with his wife Mary decided to test them on their own farm. A primary breeding farm was established in Kirkland, Washington, in 1945, where he pioneered the use of reciprocal recurrent selection in egg production stocks. The popularity of Mr. Heisdorf's stock, the H&N Nick Chick, grew and he built a staff of geneticist and veterinarians who contributed to the wide distribution of stock. As a result, many people were involved directly and indirectly in distributing up to 200 million H&N chicks annually in more than 70 countries.

From the beginning, Mr. Heisdorf supported university research programs and the NPIP. He entered the poultry industry at a time when his innovative ideas were needed, and they succeeded in lifting egg production to new levels. The fruits of his labors have been ploughed back for the betterment of mankind.



Mr. Theron A. Hensarling,
1900-1982
Trade Association Leader

Mr. Theron A. (TA) Hensarling was executive secretary of the Texas Poultry Federation from July 1, 1946, to July 1, 1966. During the same period, he served as administrative officer for the NPIP in Texas.

He was the first full-time staff member of the Texas Baby Chick Association. Under his leadership, it evolved into the Texas Poultry Improvement Association and later the Texas Poultry Federation.

Mr. Hensarling was primarily responsible for the formation of the Texas Turkey Federation, 1948; Texas Broiler Council, 1956; and Texas Egg Council, 1958.

Dr. William R. Hinshaw, 1896-1984
Researcher, Educator, Administrator

Dr. William R. Hinshaw, a Michigan native, received his Ph.D. degree in bacteriology from Yale University in 1939. Prior to that, he was on the teaching and research staff of Kansas State College from 1923 to 1927, and in charge of the Veterinary Diagnostic Laboratory, University of Massachusetts, from 1927 to 1929. From 1929 to 1949, he served as professor of veterinary science engaged in teaching and research in veterinary microbiology at the University of California, Davis, California. From 1949 until his retirement in 1966, Dr. Hinshaw worked in various capacities of animal disease investigations with the U.S. Army Biological Laboratories at Fort Detrick, Maryland.

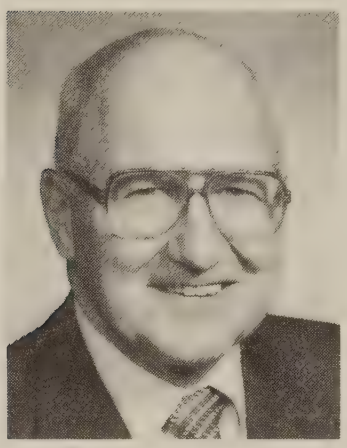
Dr. Hinshaw's early research was in the field of poultry diseases, with special emphasis on turkey diseases between 1929 to 1949. In 1928, he helped organize the first annual meeting of laboratory workers in pullorum disease eradication, a meeting which later became the present Northeast Conference on Avian Diseases. He received the Borden Award in 1948 in recognition of his work on salmonellosis and, in that same year, the National Turkey Federation Research Award for his research on diseases of turkeys. He was the author or co-author of over 100 scientific papers, and served on the editorial board of a number of professional journals.

Dr. E. Reeve Hitchner, 1891-1972
Early Leader in Control of Poultry Diseases

Dr. E. Reeve Hitchner was in charge of the pullorum testing service at the University of Maine for many years. This organization was responsible for performing the tube agglutination test for pullorum disease when the State established their pullorum testing program in the early 1920's. With the advent of the NPIP, Dr. Hitchner assumed leadership in combining the State program with the Plan and served as the State NPIP Contact

Representative for a period of 20 years until his retirement in 1958.

Dr. Hitchner was very influential in matters relating to disease control during the 10 National Plan Conferences he attended. Because Maine had been a leader in the early efforts to control pullorum disease and because these efforts were quite successful, his advice was sought by States just embarking on their control program. This advice was also very valuable to the Department during the years Dr. Hitchner served on the NPIP General Conference Committee.



Mr. Robert L. Hocker, 1919-
Executive Secretary, Ohio Poultry Association (Retired)

Mr. Robert L. Hocker served the poultry industry of Ohio and the Midwest as a member of the Ohio Poultry Association for 35 years, the last 15 years as its executive secretary. His responsibilities included the promotional activities of Ohio egg and turkey checkoff programs and the representation of the poultry industry on all State and national legislative matters relating to this segment of agriculture. He was very active in the planning and implementing of the annual poultry programs sponsored by the combined Ohio, Indiana, and Michigan associations.

Mr. Hocker assumed the responsibility for the State administration of the NPIP in Ohio in 1969, having served in previous years as the R.O.P. supervisor and field inspector. He was responsible for conducting blood tests and flock selection schools during his tenure. He was elected for a number of years to serve as a member of the NPIP General Conference Committee, representing the East North Central States. This is an official advisory committee to the Secretary of Agriculture.

Mr. Robert L. Hogue, 1913-
Administrator, Educator

Mr. Robert L. Hogue is an Ohio native who has lived in Indiana since graduation from Purdue University. While in high school, he participated

in 4-H poultry projects, an activity which carried over to his university days. Upon graduation, he went to work with the Silver Lake Egg Farm and Hatchery, one of the large R.O.P. breeders at that time, advancing to general manager. During this time he was on the board of the Baby Chick Department, Indiana State Poultry Association, and poultry representative on the Indiana State Livestock Sanitary Board. He went back to Purdue University in 1948 as Extension poultryman, a position he held until 1957. During this time he was named executive secretary of the Indiana State Poultry Association, a post he still holds.

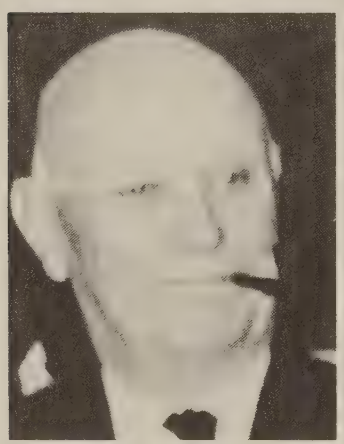
Mr. Hogue has served the industry in many capacities, including that of State Contact Representative for the NPIP. In this capacity, he has conducted many flock selection and blood testing schools and has led the industry through the different requirements for Indiana to be recognized as a "U.S. Pullorum-Typhoid Clean State" by the USDA. He has represented Indiana at 15 National Plan Conferences and has served the East North Central Region as its representative on the General Conference Committee for two 4-year terms. The highlight of the many awards Mr. Hogue has received was that of Sagamore of the Wabash presented by the Governor of the State of Indiana.

Mr. Oliver J. Hubbard, 1900-
Primary Breeder of Meat and Egg Stock (Retired)

This is an account of a family rather than an individual because so many generations of Hubbards have been involved. Although the first Hubbard, Levi, settled in Walpole, New Hampshire, in 1791, it wasn't until Ira Hubbard started raising poultry in 1914 that the family became involved with this segment of agriculture. In 1921, Oliver Hubbard, a son of Ira and a recent graduate of the University of New Hampshire, laid the foundation which grew into Hubbard Farms. The early breeding efforts of Hubbard and several other breeders resulted in a lighter colored red-feathered bird being accepted in the American Standard of Perfection as a new breed, the "New Hampshire."

Early work was directed along the lines of producing a purebred broiler chick, but this soon gave way to the barred cross, which was the mainstay of the emerging broiler industry. Later, with the increased demand for a bird with a white undercoat, Hubbard geneticists met this need with the development of the stocks which were to capture a substantial portion of the broiler market. Hubbard Farms also contributed to the table egg industry through their development of a high producing brown egg cross and the Hubbard White Leghorn. Even though Hubbard Farms

became a wholly owned subsidiary of Merck and Company in 1974, members of the sixth generation of Hubbards are active in Hubbard Farms. The company's horizons have been expanded by the acquisition of Spafas, Inc., resources in 1976 and the British United Turkeys Limited in 1978.



Mr. Ralph E. Janes, Sr.,
1892-1981
Early Breeder of Bronze Turkeys

Nearly 30 years in the business and a host of accomplishments gave Mr. Ralph E. Janes, Sr., of Austin, the Texas title of "Mr. Turkey." A founder of the Texas Turkey Improvement Program and a Texas Turkey Federation charter member, Mr. Janes was one of the first Lone Star breeders to recognize the importance of a pedigree breeding program which he conducted at his Bar Nothing Ranch near Austin. His turkeys set two world records. In 1947 at the official egg-laying contest, a Janes' hen won the official title of World Champion Egg Producer, laying 224 eggs in 365 days. In 1966, Bar Nothing produced the world's heaviest turkey up to that time. "Big Tex" weighed 64 pounds, and 6 ounces, and was only 43 weeks old.

Mr. Janes supported a cooperative research project with Texas A&M University involving the chigger, a plague of the Texas turkey industry. Texas A&M also cooperated with Mr. Janes in the first pleuropneumonia-like organisms (PPLO) control program in Texas. Each year at the peak of the turkey season, Mr. Janes would set aside poults for every FFA and 4-H member wanting a turkey project. His other contributions to the poultry industry are too numerous to mention. But words of a friend serve as a good summation: "The Bar Nothing is a hobby that grew to an institution of which we are all proud."

Mr. Wallace H. Jerome,
1909-
Founder of Jerome Foods, Inc.,
Barron, Wisconsin

Mr. Wallace H. Jerome started in the turkey business in a small way by

hatching only 1 poult from 14 eggs set under 2 broody chicken hens. From this humble beginning, he has gone on to raise many millions of market turkeys, develop his own strain of broad-breasted White breeders, and provide thousands of housewives and institutions with oven-ready turkeys. During the course of his long career in the poultry industry, Mr. Jerome operated a chicken hatchery and feed mill in partnership with his brother, was a poultry inspector with the Wisconsin Department of Agriculture, and served in various capacities in the companies he founded. During all of these endeavors, he strived for the improvement which helped make the turkey industry what it is today.

Mr. Jerome has contributed generously of his time, talents, and money to many 4-H, FFA, and other youth functions as well as to many civic organizations. In return, he has received many awards and citations from various honorary and trade associations, not the least of which was a citation from the Wisconsin Legislature for raising and entering the 75-pound winning "tom turkey" in the 1967 National Turkey Federation contest.

Dr. Morley A. Jull,
1885-1959
Researcher and Educator

Dr. Morley A. Jull, internationally known poultry expert, devoted a lifetime to the improvement of the poultry industry. Prior to earning his Ph.D. degree at the University of Wisconsin in 1922, he served at several universities and as poultry commissioner, British Columbia Department of Agriculture. In 1923, he was appointed senior poultry husbandman, USDA, where he effectively participated in the planning and expansion of the poultry research facilities at Beltsville, Maryland. This expansion fostered research embracing breeding for egg and meat production, factors affecting the quality of eggs and poultry meat, incubation, nutrition, and physiology.

In 1936, Dr. Jull accepted the position of head of the Poultry Department, University of Maryland, where he continued in his efforts to provide for the advancement of the poultry industry. His poultry articles in the National Geographic magazine, the Encyclopedia Britannica, the World Book Encyclopedia, as well as his four widely used textbooks gave him worldwide recognition in the field of poultry. He received many awards and honors during his 52 years of active service, not the least of which was his election to the Poultry Hall of Fame in 1956.

Dr. J. W. Kalkus, 1887-1981
Superintendent, Western
Washington Experimental Farm

Dr. J. W. Kalkus spent a major period of his life as superintendent of Western Washington Experimental Farm at Puyallup, Washington. Additional duties during this 30-year period (1923-53) included overseeing all research at the other Washington State experimental farms. While these duties included responsibility for many avenues of agriculture, he exhibited a special affinity to poultry.

Graduating from the Veterinary College of Kansas City, Missouri, with a D.V.S. in 1909, he went directly to Washington State University at Pullman, where he was a professor and researcher until 1922, when he accepted the position at the experimental farm. In his new position, he immediately became involved with poultry, becoming director of the Washington Accredited Hatchery Association in 1924. Testing for bacillary white diarrhea (B.W.D. or pullorum) was made compulsory for breeders belonging to association members in 1926. Dr. Kalkus reported that of the 48,000 birds tested that year, nearly 7,000 were positive. The rate of infection in the 249 individual flocks ranged from 0 to 61 percent. When the National Plan became operative, he assumed the duties of Contact Representative, a post he held until he retired in 1953.

Mr. F. W. Kazmeier, 1890-1969
Progressive Hatcheryman

Mr. F. W. Kazmeier joined the staff of Texas A&M University as the school's first poultryman in the fall of 1914. He was assigned to teach 4 hours of practical laboratory work, but there were no poultry or chickens.

Mr. "Kaz" then built the Texas A&M Poultry Farm, which consisted of four laying houses.

On July 1, 1915, he became the State's first Extension poultry specialist, where he organized hundreds of "Egg Circles" which really were egg-marketing co-ops. Mr. Kazmeier left the Extension Service in 1922 to devote full time to his hatchery, where he continued to do business at the same Bryan location throughout the rest of his life.

Mr. C. Howard King,
1896-1980
Administrator of Poultry Improvement Programs

Mr. C. Howard King devoted 40 years to the poultry and egg industry in various capacities with the Wisconsin Department of Agriculture. He retired in the mid-1950's as head of the Poultry and Egg Marketing Division. During his early years with the department, he established Wisconsin's first egg regulations and the State hatchery and breeding flock programs for poultry improvement. This included the "Accredited," "Certified," and R.O.P. programs in the late 1920's. Early in the "Accredited" program, 159 Wisconsin hatcheries participated in blood testing for pullorum disease.

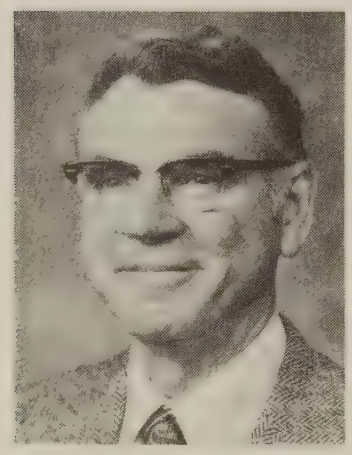
Shortly after the NPIP became available to the States and industry, Mr. King adapted the State program to the rules governing participation in the Plan. Thirteen early breeders participated in the new R.O.P. program and over 100 hatcheries became Plan participants. The early demand for superior breeding stock was great, and Mr. King was instrumental in arranging for the shipment of some of the first White Leghorn breeding stock ever sent to Russia.

Mr. Dale Franklin King,
1906-1983
Educator-Researcher

Professor King was born in Athena, Oregon, on March 10, 1906. He received his B.S. degree at Oregon State University and his M.S. degree at Kansas State University where he studied under Professor L. F. Payne. He joined the staff of the Department of Poultry Science at Auburn University in 1930 and was named department head in 1947, a position he held until his retirement in 1967. In his 37 years of service to the poultry industry, he demonstrated outstanding leadership in teaching, research, and administration. As an investigator, he made many contributions to poultry

science in the fields of pathology, genetics, physiology, and nutrition. He contributed significantly to the knowledge of housing and poultry management, either through his own efforts or by encouraging and advising others to engage in research in these areas.

Professor King was internationally recognized for his studies on lighting, cage layer management, and disease resistance. The development in the early 1950's of a strain of White Leghorns bred for resistance to the avian leukosis complex demonstrated that this disease could be controlled through genetic selection. He authored or co-authored numerous scientific and popular articles and several books.



Dr. Cecil F. McClary, 1913-
Poultry Geneticist, Researcher, Administrator (Retired)

Dr. Cecil F. McClary brought fame to himself and recognition to the State of Washington through his expert direction of the poultry breeding program of Heisdorf and Nelson Farms from 1956 to 1977. Previous to this, he was a scientist with Washington State University, conducting research in genetics and other fields at the Western Washington Research and Extension Center in Puyallup. He is the author or co-author of 21 scientific papers, and has contributed numerous articles to the popular press.

Dr. McClary served as a director of the Washington Poultry Improvement Association for many years, as its president several times and, since 1981, as its secretary-treasurer. In connection with this, he served as the Western Region representative on the General Conference Committee of the NPIP. Other affiliations are the following: Poultry Science Association, chairman of committees; World's Poultry Science Association, board member; National Poultry Breeders Roundtable, president; Scientific Advisory Committee of Pacific Egg and Poultry Association, chairman; and National Poultry Industries Association, member Research Council.

Mr. Chester L. Manwaring,
1889-1967
Early Breeder of White Leghorns

The Manwaring Leghorn Farms had its start in 1911 when Mr. Artemus Manwaring formed the family business in Mentone, Indiana. It wasn't long before Mr. Chester Manwaring, a son of Artemus and a school teacher, recognized the void which existed in the source of a high-producing strain of White Leghorns in the Midwest. He joined his father; and despite the turbulent times of the 1920's and 1930's, the Manwaring Leghorn Farms grew to be one of the largest egg-producing farms in the area.

Mr. Manwaring was responsible for the progress being made while he carried on the R.O.P. breeding program. In the early years of participation in this program, facilities were available to trapnest 1,500 candidates annually. In 1948 over 65 percent of the candidates qualified as R.O.P. by producing over 200 eggs each. Continual performance like this soon led to the firm entrenchment of the Manwaring strain as an important source of White Leghorns in the egg-producing areas of the Midwest.

Mr. Stanley J. Marsden,
1897-1971
Educator, Turkey Researcher

Mr. Stanley J. Marsden was born near Hickley, New York. He received a B.S. degree at Michigan State College in 1921 and a M.S. degree at the University of Nebraska in 1930. From 1921 to 1929, he was instructor in poultry husbandry at the University of Nebraska. In 1929, he joined USDA and was placed in charge of turkey investigations at Miles City, Montana. In 1935, he transferred to the U.S. Agricultural Research Center, Beltsville, Maryland, where he was engaged in experimental work with turkeys in the areas of genetics, nutrition, and environment.

He was probably best known for his work in developing the Beltsville Small White turkey. He was author or co-author of numerous scientific papers, USDA publications, popular articles, and was co-author of the

book, "Turkey Management." He helped establish the national Turkey Improvement Plan and served as advisor to that program. He received many honorary awards from industry and Federal and State Governments.

Dr. J. Holmes Martin, 1895-1977
Teaching, Research, Public Service

Dr. J. Holmes Martin received his Ph.D. degree at the University of Wisconsin in 1929. This followed 16 years during which he was both a student and a teacher at several universities. He was in charge of the poultry husbandry department at the University of Kentucky from 1922 to 1938, when he was appointed director of the USDA Regional Poultry Research Laboratory at East Lansing, Michigan. In 1940, he became head of the poultry department at Purdue University, a position he held until 1962. Dr. Martin also served as a consultant for a commercial poultry breeding company and as leader of foreign poultry projects and other agricultural activities in foreign countries.

Dr. Martin was author or co-author of more than 80 scientific papers. In addition to many bulletins on poultry, he authored the chapter on sanitation in the textbook, "Poultry Diseases," and co-authored the book, "Turkey Management." He served in many capacities in numerous agricultural and poultry associations, boards, institutes, societies, and committees. He also received many honors and awards from the organizations in which he served. He was elected to the Poultry Hall of Fame in 1971.

Mr. Pren Moore, 1880-1965
Extension Poultry Specialist

Mr. Pren Moore made a major contribution to the development of the poultry industry in Idaho, and especially with the initiation of the NPIP

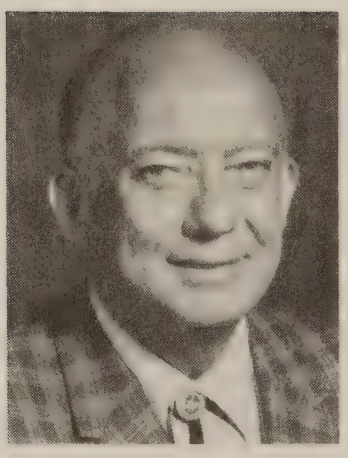
in 1935. At that time Idaho had only a very small number of small hatcheries. Through his vigorous support, education, and training of poultrymen and hatcherymen, the hatchery industry in Idaho grew rapidly to a total of approximately 50 hatcheries during the 10-period following the initiation of the Plan.

He was extremely successful in the training and guidance of hatcherymen in both flock selection and in the pullorum testing standards. At that time almost all hatcherymen had small breeding flocks but depended largely upon contract flockowners for most of their hatching eggs. The poultry industry and administrators at the University of Idaho have all agreed that the development of both the hatchery and poultry industries during this period of time owes much to the major contributions made by Mr. Moore.

Dr. Irwin M. Moulthrop, 1908-
Director, Diagnostic Laboratory, Maryland Department of Agriculture, Salisbury, Maryland (Retired)

Dr. Irwin M. Moulthrop, a graduate of the New York State Veterinary College at Cornell University, started to work for the Maryland Livestock Sanitary Service in 1931. His earliest responsibilities were involved with the collection of blood samples to be tested for pullorum disease under the Maryland pullorum control program. This was usually done in conjunction with an Extension poultryman responsible for selecting the individual birds for general health and breed characteristics. In 1936 he set up the first branch laboratory for pullorum disease testing at Salisbury. This laboratory later offered other diagnostic services for poultry until the present laboratory was designed and constructed under Dr. Moulthrop's supervision at the present site near Salisbury in 1951.

Dr. Moulthrop served the poultry industry of the Eastern Shore through a long and faithful tenure of 44 years. During this time, in addition to his regular laboratory duties, he demonstrated to industry the method of application of fowl pox vaccine produced by the laboratory and the use and methods of application of vaccine for such diseases as infectious laryngotracheitis, Newcastle disease, and infectious bursal disease. He also set up fluorescent antibody facilities at the laboratory, which permitted a more rapid diagnosis of certain poultry diseases.



Mr. George A. Nicholas, 1916-
Primary Breeder of White Turkeys (Retired)

Mr. George A. Nicholas founded the Nicholas Turkey Breeding Farms of Sonoma, California, in 1939. This company has evolved into the most dominant primary breeder of large white turkeys in the world, with its bloodlines being involved in a major portion of the world's commercial turkey production. Mr. Nicholas was one of the first breeders to utilize the skills of scientists and veterinarians to enhance his strain of turkeys. In the early development of the commercial turkey industry, he realized that the white feather would be vital for consumer acceptance. In addition to his expertise and vision in developing a genetically superior turkey, his company devoted considerable time and money to stop the cycle of infection of a number of diseases which are transmitted through the hatching egg to the poult.

Mr. Nicholas actively fought for things he felt would be good for the whole turkey industry. When turkey marketing orders were proposed in 1961, he spearheaded successful opposition to that idea. He continually urged the industry not to overproduce following a particularly profitable year. Nicholas Turkey Breeding Farms continues to be recognized as an organization not afraid to try new ideas, techniques, and concepts in its never-ending quest for the "ultimate" turkey.

Dr. Norman O. Olson, 1914-
Professor and Researcher in Poultry Pathology, West Virginia University (Retired)

Dr. Norman O. Olson received his D.V.M. degree from Washington State University in 1938. He worked for 10 years for the Federal Government before going to West Virginia University as a professor of animal pathology in 1948. He now has the title of "professor emeritus."

Dr. Olson studied bird diseases for over 30 years and is credited with having discovered three important diseases of birds—quail bronchitis, which is a respiratory disease; infectious synovitis; and avian viral ar-

thritis. Quail bronchitis was the first disease known to be caused by an adenovirus. Many of the leg problems in broilers have been clarified by Dr. Olson's work. In 1967, he set up an eradication program for infectious synovitis in England.

In 1972, Dr. Olson received the American Feed Manufacturers Association, Veterinary Medical Research Award, recognizing his outstanding contribution to research as it relates to the production of livestock and poultry. In 1979, he was presented the Upjohn Achievement Award for his research in avian medicine. Dr. Olson is the author and co-author of more than 78 scientific articles and 5 monographs.

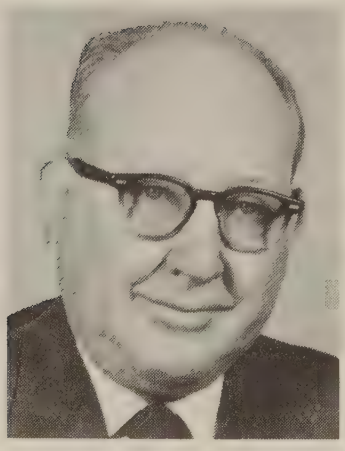
Dr. Benjamin S. Pomeroy, 1911-

Professor and Head, Department of Veterinary Microbiology and Public Health, University of Minnesota (Retired)

Dr. Benjamin S. Pomeroy has been closely associated with the poultry industry and the NPIP since its inception in the 1930's. The principal disease problems facing the poultry industry at that time were pullorum and paratyphoid infections. Through his leadership in a team effort, Minnesota became one of the first States to qualify for Phase II of the USDA Pullorum-Typhoid Eradication Program for Turkeys. Dr. Pomeroy and other researchers at the University of Minnesota, in cooperation with members of the turkey industry, developed an antigen and pilot control program for *Mycoplasma gallisepticum* (MG) in turkeys in the 1950's. This program has had 100 percent cooperation of the turkey industry.

He was a member of the NPIP Advisory Committee from 1950 to 1972, and again in 1978. In 1950, the Minnesota Turkey Growers Association developed an industrywide Turkey Breeder Hen Committee, which was instrumental in developing the official typhimurium and MG control programs that have been implemented by the NPIP. Dr. Pomeroy served as chairman of this committee from 1952 to present.

Throughout his professional career, Dr. Pomeroy has had a keen interest in avian health. He has dedicated his research career to those diseases which are economically important to the poultry industry. His contributions to avian medicine are of the highest quality.



Dr. John H. Quisenberry, 1907-1980
Professor and Head, Poultry Science Department, Texas A&M University

Dr. John H. Quisenberry, Professor Emeritus, was born in Gainesville, Texas. His academic career began as a research assistant at the University of Illinois and culminated as professor and head, Department of Poultry Science, Texas A&M University. He was a major professor for 41 Ph.D. and M.S. degree candidates. He authored or co-authored 181 scientific papers, 101 abstracts, and over 100 popular articles. His major research was in the area of laying hen nutrition and management.

Dr. Quisenberry was recipient of many honors, including being elected president of the Poultry Science Association, Texas A&M Chapter of American Association of University Professors, and the American Poultry Historical Society. In addition, he received many honorary awards including being elected a fellow in the Poultry Science Association, the American Association for the Advancement of Science, and the Texas Academy of Science. He was chairman of the Texas Poultry Improvement Board, which administered the NPIP from its inception until 1972. The Texas Poultry Federation awarded him the Golden Feather Award in 1969.

During his academic career, he visited 36 countries and served as a consultant and/or advisor to numerous national and international companies, agencies, and organizations.

Mrs. Lorraine Radtke, 1896-1961
Successful Early Hatchery and Breeding Flock Owner

Mrs. Lorraine Radtke, a prominent hatchery woman, went into the hatchery business about 1930 with her brother. With the capacity for producing 145,000 hatching eggs, their hatchery quickly developed into the leading hatchery in the eastern part of Wisconsin. This growth occurred because of the reputation they developed for producing baby chicks with high livability and profitable performance. Strict adherence to the State

and NPIP breeding and blood testing programs aided attaining these high standards.

For many years Mrs. Radtke also was able to run a combination flockowner-management seminar that was regarded as the best in the State. Part of her success was due to her ability to provide a feast of food and food for thought through the experts she brought in to discuss various management aspects to better their flocks' productivity.

Miss Harriett Rimmer
Manager-Administrator, Missouri Poultry Industries Association

"Miss Harriett Rimmer has actively and consistently served the poultry industry of Missouri since the early 1930's," so says her associate of many years, Dr. E. M. Funk. In 1932, Miss Rimmer processed the R.O.P. poultry breeding records which were then handled by the Department of Poultry Husbandry, University of Missouri. In 1935 when the NPIP was established and Missouri began operation under the Plan, she kept the records and ultimately became a full-time employee of the Missouri Poultry Improvement Association (MPIA). In the 1940's and 1950's, the MPIA program was a very large operation with 3 million chicken breeders being blood tested and legbanded annually.

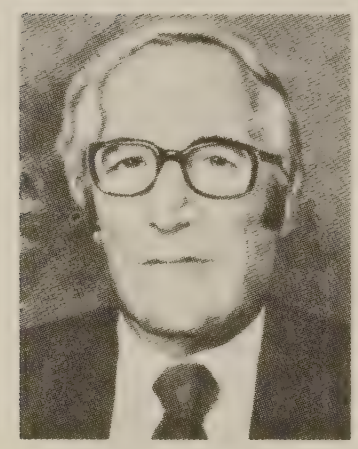
In more recent years, Miss Rimmer has worked closely with the State department of agriculture in handling flock blood-testing reports and summary reports for the USDA National Plan office. Through her office, the channels of trade have been kept open for Missouri chicks, poults, and hatching eggs to move freely among States and into foreign countries. She has also been untiring in handling the details and managing more than 30 Missouri poultry industry conventions. It can truly be said that Miss Rimmer has devoted her life to serving the Missouri poultry industry.

Mr. Percy B. Rowley, 1903-
Longtime Breeder of New Hampshire Reds (Retired)

Mr. Percy B. Rowley, a native of Alberta, Canada, immigrated to the

United States in 1920. After a poultry course under Mr. George Shoup, he started with a flock of White Leghorns but soon switched to New Hampshires. Through an intensive breeding program and topnotch management, Rowley New Hampshires were averaging 243 eggs per year by 1928. With records like these, demand for breeding stock increased considerably. Although continuing with a relatively small operation, Mr. Rowley's foreign sales increased dramatically. In 1952, the United Nations selected him to accompany a shipment of 70,000 hatching eggs to Korea. Shipments of many thousands of other eggs were made to Hong Kong, Japan, Singapore, and Italy. Officials in Hong Kong were so pleased with the favorable impact Rowley's New Hampshires were making on their industry that they issued two commemorative postage stamps showing the New Hampshire chicken.

Mr. Rowley served for 45 years as a member and officer of the Washington Poultry Improvement Association. When the NPIP started, he pushed to integrate State programs with the Plan and participated in both the breeding and disease control phases. He has held many offices in poultry organizations and in the community and remains a strong supporter of the Plan. Mr. Rowley and his wife, Cecelia, continue their many activities and have plans to attend the 1984 World's Poultry Congress in Finland.



Mr. Henry Saglio, 1911-
Prominent Breeder of Meat-Type Chickens (Retired)

Mr. Henry Saglio, like many of his colleagues in the early days of the commercial broiler industry, raised his first flock of chickens as a boy of 12. At the urging of a poultry processor in nearby Hartford, Connecticut, he purchased White Plymouth Rocks and proceeded to breed for more desirable meat characteristics. He made a fortunate choice of breeds because shortly thereafter the colored feathered birds, which had been the mainstay of the fledgling broiler industry, were gradually giving way to the white feathered breeds and crosses. By 1948, his Arbor Acres White Plymouth Rocks were favorably competing with other broiler strains, as evidenced by his entry being judged best of all purebreds in the 1984 National Chicken-of-Tomorrow Contest. This recognition provided the necessary stimulus for the growth of Arbor Acres Farms and its White Plymouth Rocks, the broiler bird most responsible for a total industry shift to white feathers.

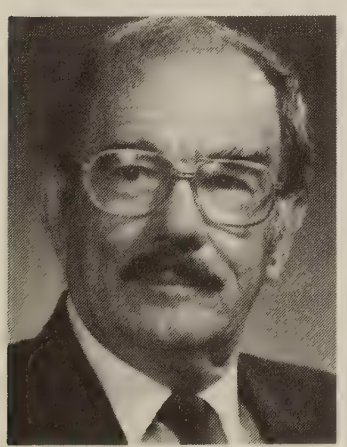
Mr. Saglio was the first to establish distribution farms in the broiler-

producing areas of the world, thus enabling commercial hatcherymen to obtain breeding stock from acclimated parent stock. In making a total commitment to the genetics phase of the industry, Mr. Saglio secured the services of some of the leading geneticists and pathologists in the country. His foresight and untiring efforts resulted in the Arbor Acres stock producing a large portion of the commercial broiler chicks raised in the United States and around the world. Mr. Saglio was elected to the Poultry Hall of Fame in 1977.

Dr. Daniel E. Salmon, 1850-1914
First Chief of the Bureau of Animal Industry, USDA

Dr. Daniel E. Salmon, who was born in New Jersey, was a member of the first freshman class at Cornell University, Ithaca, New York, in 1868. He graduated in 1872 with the degree of Bachelor of Veterinary Science, and in 1876 earned his D.V.M. degree. Following university and State work, Dr. Salmon came to USDA to investigate animal diseases. This was followed by his appointment as chief of the new Bureau of Animal Industry in 1884, a position he held until he resigned in 1905.

As chief of the Bureau, Dr. Salmon urged Congress to provide the money necessary to effectively reduce and eradicate destructive animal diseases. He was soon given the authority to quarantine infected herds and to pay indemnity for animals infected with certain diseases. Although responsible for regulatory work, he never lost his desire for research. Following his being one of the first to recognize and study fowl cholera in the United States (in 1880), he continued his research activities, with the name of the organism *Bacterium pullorum* being changed to *Salmonella pullorum* in honor of his work with members of this genus.



Dr. Robert N. Shoffner, 1916-
Professor, Department of Animal Science, University of Minnesota

Dr. Robert N. Shoffner, professor, Department of Animal Science, University of Minnesota, has had a tremendous influence on the progress

made in breeding improvement of the poultry industry. Beginning in 1940, he organized and conducted flock selection short courses to train hatchery selection agents. He organized R.O.P. breeding short courses to inform breeders how to use family selection and how to organize matings to secure accurate information about desirable traits. He served as a personal consultant and visited breeders' farms to help them with special breeding techniques.

Dr. Shoffner has served on the national committee of Poultry Breeders of America, regional R.O.P. Breeders Symposiums, as chairman of the Minnesota Random Sample Committee, and on many other committees. His standards for family selection made it possible for many hens to qualify as R.O.P. 300-egg hens in a relatively short time. His early research on inbreeding and strain-crossing produced the breeding methods that are still used in our present breeding programs. Dr. Shoffner has been a dedicated teacher who has generously shared his breeding skills and selection standards with many.

Mr. Hollis Shomo, 1902-
Administrator and Leader in Poultry Improvement Work (Retired)

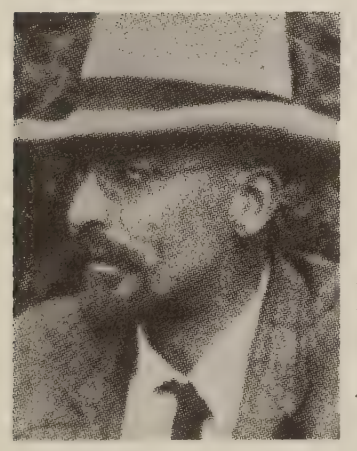
Mr. Hollis Shomo, born on a farm in Rockingham County, Virginia, became involved with poultry early in life when he joined the Massanutten Farms Hatchery, which at that time was one of the largest commercial hatcheries in the United States. He managed the breeding flocks and became one of the first flock supervisors in the country. Between the years 1928 and 1972, his distinguished career with the Virginia Department of Agriculture led him from poultry inspector to director of the Virginia Division of Markets. During a large portion of this time he served as the Virginia Contact Representative for the NPIP. An early champion for the improvement of poultry, his arguments toward this end were legendary at the many National Plan Conferences which he attended. He represented the South Atlantic States for many years as a member of the NPIP General Conference Committee.

Mr. Shomo was a prolific writer and contributed many articles to various trade journals. He served many trade associations in various capacities. In 1958, he received an award from the Virginia Poultry Federation for outstanding service to the poultry industry. While serving as director in 1965, the Virginia Division of Markets was the recipient of USDA's Superior Service Award. Mr. Shomo is listed in "Who's Who in the South and Southwest."

Mr. George Shoup,
1873-1928
Innovator and Organizer of Cooperative Poultry Associations

Mr. George Shoup had a definite impact on the early poultry industry in the Northwest. He exerted great influence and effective guidance at a time when the industry was moving from small backyard operations to the larger enterprises which were the forerunners of today's great industry. Mr. Shoup gained firsthand knowledge of poultry when he started his farm at Lynden, Washington, in 1907. His innovative ideas on housing and management, such as using lights to increase production, soon caught the eye of other poultrymen. When he and his wife were asked to develop and operate a demonstration farm at the Western Washington Experimental Farm at Puyallup in 1915, his ideas became much more accessible to a growing number of poultrymen.

Mr. Shoup used his enthusiasm, knowledge, and influence in helping to organize the Western Washington Standard Egg-Laying Contest, one of the first such tests in the country. He also was instrumental in organizing and launching the Washington Co-op Egg and Poultry Association about 1918. As the need increased for better producing stock which were free of pullorum disease, he helped organize the Washington Accredited Hatchery Association in 1923. This organization combined the State R.O.P. program with the pullorum testing program and eventually became the State agency which cooperated with the NPIP when it was founded.



Mr. Douglas Tancred,
1867-1923
Early Breeder of World Famous White Leghorns

Long before trapnesting of poultry breeding stock was a common practice in the United States, Mr. Douglas Tancred was using this technique to improve his strain of White Leghorns. Shortly after the turn of the 20th century, Mr. Tancred inititated a large-scale trapnesting program at his Kent, Washington, breeding farm. As with most products which prove to be superior, the infant poultry industry "beat a path to his door." A reliable

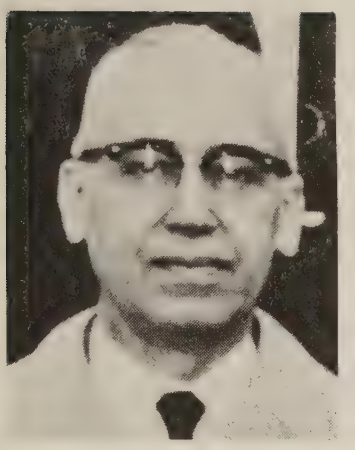
estimate is that by 1922 one-third of all White Leghorns raised in North America had the blood of Tancred Leghorns in them. The value of his stock can be attested to by the fact that he sold 2 males for $500 each, and a pen of 12 pullets and a male for $1000.

Mr. Tancred moved from Maine to Washington State on the advice of his doctor who had hoped the Northwest climate would prolong his life expectancy, which at that time was 2 years. Exhibiting the same type of courage and grit he had applied to his poultry breeding projects, he proved his doctor wrong and went on to live an additional quarter century. Even though he spent his last productive years in a wheelchair, Mr. Tancred's contribution to the American and world poultry industries will long be felt.

Mr. W. T. Tramel, 1922-
Poultry Epidemiologist, Administrator

Mr. W. T. Tramel or "T," as he is known by his colleagues and friends, is a Mississippi native who has been deeply involved with poultry since he graduated from Mississippi State with a degree in poultry. Following his discharge from the Army in 1945, he entered college, and in 1950, he became a poultry inspector with the Mississippi Board of Animal Health. From that day to the present, he has been a firm supporter of the NPIP and has been instrumental in having all Mississippi breeding flocks and hatcheries participate in the various disease control programs of the Plan.

Mr. Tramel has been an outspoken advocate of all facets of the poultry industry in his State. He has submitted more proposed changes to the disease control phase of the NPIP than any other person. When proposals were considered during the 17 National Plan Conferences which he attended, Mr. Tramel pleaded with, cajoled, and otherwise influenced the voting State delegates to favorably consider his proposals. In times of emergency poultry disease situations in Mississippi, "T" is always in the forefront of the effort to provide a remedy. Mr. Tramel has been elected to several terms as the South Central Region member of the NPIP General Conference Committee, an advisory committee to the Secretary of Agriculture. He received the Distinguished Service Award from both the Mississippi Poultry Association in 1968 and the Mississippi State University Alumni Association in 1973. His latest recognition came when he was elected into the Mississippi Poultry Hall of Fame in 1981.



Dr. Henry Van Roekel, 1901-1982
Researcher and Educator

Dr. Henry Van Roekel was a pioneer in the epidemiology and control of *Salmonella pullorum*. After receiving a D.V.M. degree at Iowa State University and a Ph.D. degree at Yale University, he was appointed chief of laboratory in the Department of Veterinary Science at the University of Massachusetts. This gave him the opportunity to study firsthand the early problems associated with controlling pullorum disease. During his career, he also greatly contributed to the knowledge of infectious bronchitis and to the immunization of commercial flocks in the field. This, along with his work with Newcastle disease, was a major contribution to the commercial poultry industry. His work with *Mycoplasma gallisepticum* was the first to demonstrate the commercial feasibility of developing and maintaining breeding flocks free of this organism.

Dr. Van Roekel was a founder of the American Association of Avian Pathologists and played a major role in establishing its journal, Avian Diseases. He was a constant contributor to the Northeastern Pullorum Disease Conference and was its secretary for 10 years. He was the recipient of many honors and awards, including the Tom Newman International Award in 1952. Dr. Van Roekel truly was one of the pioneers who played a major role in the development and success of the poultry industry.

Mr. Charles Vantress
Primary Breeder, Broiler Breeding Stock

Mr. Charles Vantress graduated from the College of Agriculture, University of California, with a degree in agricultural economics. He returned to the family hatchery and baby chick business in Live Oak, California; and after 4 years, in 1939, started a separate division of the partnership to develop a pedigree breeding program for meat production stock. His first venture into the commercial broiler breeder market was with the Vantress

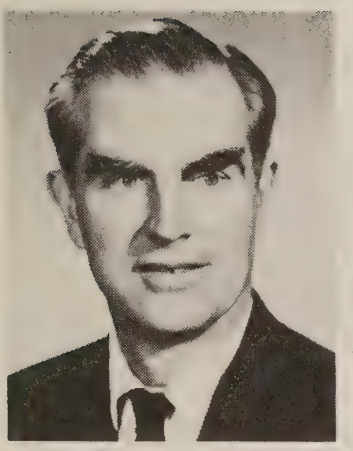
Red Male Line, which originated from the bloodlines of Dark Cornish males and New Hampshire females. The broiler industry was ready for this specialized meat-type breeding male. Both of the National Chicken-of-Tomorrow Contests were won by broilers sired by the Vantress Red Male Line. The winning entry for the first contest, which was held in 1948, averaged 3.57 pounds in 12 weeks, with a feed conversion of 3.17.

About 1953, the industry was demanding a white feathered broiler. Mr. Vantress was ready with his Vantress Dominant White Male Line. Shortly after this, the Vantress facilities were moved to Georgia to be closer to the broiler-growing area of the country. These new facilities enabled 350 single male matings to be maintained as well as 200,000 other breeders. In 1958 it was estimated that the Vantress male sired about 70 percent of all commercial broilers in the United States or about 1 billion birds.

Mr. G. S. Vickers, 1895-1974
Early Advocate of Standardized Programs for Poultry Improvement

Mr. G. S. Vickers was active in NPIP work from the beginning of pullorum infection in the commercial hatchery business. He was a driving force behind the effort to unite all individual State programs into one unified National Plan when it was established. This would provide uniform provisions and terminology for all disease control and breeding programs and would help end the confusion which existed when prospective customers tried to evaluate stocks. He provided leadership and convincing figures to prove the value of the retesting program for the eradication of *Salmonella pullorum.*

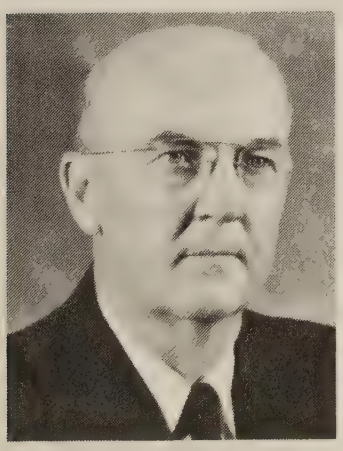
Mr. Vickers administered the program in Ohio from 1926 to 1961 when he retired. During his tenure, he served several years on the General Conference Committee, an advisory committee to the Secretary of Agriculture. He was recognized as one of the outstanding speakers and writers in the United States on the National Plan program. He published a number of bulletins on poultry improvement and was co-author of the textbook, "Hatchery Management."



Mr. Henry B. Wallace, 1915-
Early Primary Breeder of Egg Production Stock, Research (Retired)

Mr. Henery B. Wallace was born in Des Moines, Iowa. Following graduation from Roosevelt High School in Des Moines, he attended Antioch College in Ohio. While attending college, he started a hybrid seed corn project which later became a part of his father's seed corn business. After 2 years, he transferred to Iowa State College where he received his B.S. degree in 1938. After graduation, he assumed management of a poultry breeding project under the Hybrid Seed Corn Company. This project later became Hyline Poultry Farms. Mr. Wallace formulated a pattern of production and sales of baby chicks through independent associate hatcheries, which is now a basic procedure for the industry. He was one of the pioneers who used the inbred-crossbred breeding technique.

After serving 2 years in the Navy, Mr. Wallace returned to a budding chick business which was taking on worldwide dimensions. He put together a research staff of geneticists, nutritionists, pathologists, and management specialists; and directed their pursuit of both basic and applied research. In the 1950's, he cofounded the Poultry Breeders Roundtable and Poultry Breeders of America. In recent years, he wrote several articles concerning the questionable role of egg cholesterol in nutrition and its impact on the egg industry. He has been highly supportive on the National Council of Egg Nutrition. As a director of the Wallace Genetic Foundation, he continues to arrange grants for research in this area. Mr. Henry B. Wallace is a son and grandson of former U.S. Secretaries of Agriculture.



Mr. Charles W. Wampler, 1885-1976
Pioneer Turkey Grower and Industry Leader

Mr. Charles W. Wampler was one of the first county agricultrual Extension agents (1910-1927) in the United States. In the infancy of the industry, he became interested in turkeys and was one of the first persons to

commercially hatch poults in an incubator and brood them on a large scale. After founding the Wampler Feed and Seed Company in 1927, he conducted some of the first feed testing and experimental work on turkeys in the United States. Today this company, now Wampler Foods, Inc., is a leading turkey-producing company. It includes breeder and grow-out operations, a hatchery, a feed mill, and a processing plant.

In 1938, at the World's Poultry Congress in Cleveland, Mr. Wampler played a leading role in starting the National Turkey Federation and served several years as its president. He held many other offices in State and national poultry organizations, including president of the State board of agriculture and a member of the board of Virginia Polytechnic Institute. He later became interested in cattle and was a leader in the development of Angus and Charolais cattle. He started the Beef Cattle Improvement Association in Virginia. He was elected to the Poultry Hall of Fame in 1953.

Dr. Don C. Warren, 1890-
Researcher and Teacher of Genetics and Physiology (Retired)

Dr. Don C. Warren, teacher, scientist, and geneticist, was born in Indiana and earned his Ph.D. degree from Columbia University in 1923. He has taught at all levels of educational institutions, from elementary school through graduate school. And in between he found time for research, writing, advising, and developing a genetic program for a major poultry breeder. He is the author or co-author of over 100 scientific papers and bulletins and author of the textbook, "Practical Poultry Breeding."

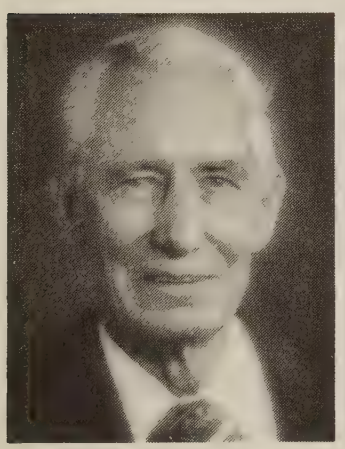
Dr. Warren was professor and advisor to many students who went on to have distinguished careers in their chosen fields in industry and academia. He performed outstanding research in genetics and physiology including feather and color sexing, chromosome mapping, trait inheritance, physiology of reproduction, and value of hybrid vigor. He had the opportunity to put his research findings to practical application during his years as geneticist with a commercial breeder. He also was a consultant to a number of foreign poultry projects.

Dr. Warren is the recipient of many honors and awards, including the Superior Service Award from USDA for his work as director of the USDA Poultry Breeding Laboratory located at Purdue University.

Dr. James E. Williams, 1924-
Leading Scientist and Researcher on Avian Salmonella (Retired)

Dr. James E. Williams has contributed significantly to the growth of the poultry industry through his efforts to improve poultry health by the control of avian salmonella infections. He has been a pioneer in conducting research on the penetration of paratyphoid salmonella through the outer structures of the egg and has promoted the early application of formaldehyde fumigation of hatching eggs to aid in the control of salmonella infections. He assisted in promoting procedures for the control of avian salmonella infections in several other countries by training visitors in his laboratory; supervising several graduate students; and giving numerous guest lectures, demonstrations, and seminars.

Dr. Williams was instrumental in developing, standardizing, and promoting the use of NTZ-stained antigens in the microagglutination test, which is now one of the approved methods employed within the NPIP. He has been an active member of the technical advisory committee for the control of salmonella during most of the NPIP Conferences since 1950, and was active in the World's Poultry Veterinary Association, presenting papers on salmonella control at several of its international meetings. From 1959 to the present, he has served as editor of the section on "Avian Salmonellosis" and author of the chapter on "Paratyphoid Infections" in *Diseases of Poultry* for the fourth through the eighth editions.

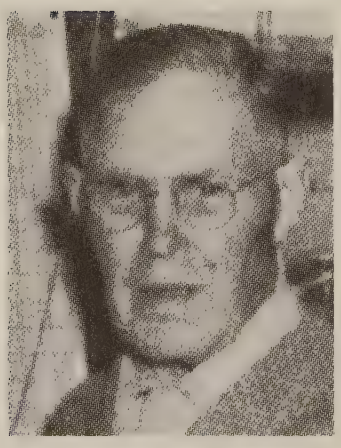


Mr. Amel Willingham, 1913-
Hatchery Manager and Improvement Association Official

Mr. Amel Willingham has been involved with poultry for over 55 years, starting as a member of his high school poultry judging team in 1928. He continued working with poultry while in high school and while at Texas Technical College at Lubbock, Texas. Following graduation, he was employed by Swift and Company as an assistant hatchery manager at their Lubbock plant. This gave him considerable experience with a large com-

mercial operation. He was next promoted to hatchery manager at the Swift plant at Taylor, Texas, where he served from 1942 to 1948. Following that, he was appointed hatchery manager for Janes Bar Nothing Ranch in Austin, Texas, and later as general manager, a position he held until the ranch was sold in 1971.

Mr. Willingham's firsthand experience in various field positions made him a valuable asset to the Texas Poultry Improvement Association when he was elected to its board of directors in 1959. During the 1960's and 1970's, he continued to serve the Texas poultry industry in various capacities in the association and participated in three National Plan Conferences (1960, Athens, Georgia; 1964, Washington, DC; 1970, St. Louis, Missouri). He is currently with Plantation Foods, Inc., Waco, Texas.



Mr. B. C. Young, 1874-1964
Poultry Breeder and Strong Advocate of Poultry Cooperatives

Mr. B. C. Young was one of the earliest breeders of White Leghorns in the northwestern States. He started his trapnest breeding program in 1918 and began participating in the Washington State R.O.P. program in 1923. In 1924, his five-bird pen of White Leghorns produced an average of 290 eggs per bird in the Western Washington Egg Laying Contest, a record which was never equaled during the history of the test.

Mr. Young was a director of the International Baby Chick Association for many years and served as its president during the early 1930's. He assisted in the early development of the Washington Co-op Egg and Poultry Association and had the distinction of being the director of what may have been the first Co-op Baby Chick Sexing Association in the United States. His duties in this position included the training of students in this specialized skill. He produced hundreds of pedigree male chicks to sire White Leghorn breeding flocks, supplying hatching eggs to the Poultryman's Co-op Hatchery in Bellingham, Washington. While doing all of this, he still found time to manage the hatchery and supervise the production of upwards of 40,000 baby chicks a week during the spring hatching season.

Events

A Chronological List of Events Which Have Helped Shape the Poultry Industry

During the past century, many events have taken place which have contributed to making the poultry industry what it is today in the United States and in the world. Individuals, organizations, and programs have played a vital role in bringing a fledgling industry, which was incidental to most farming enterprises, into a major agricultural industry. Research, inventions, ingenuity, and hard work have lifted the poultry industry out of the "butter and egg money" category and into a 10-billion-dollar operation.

The events listed here are but a few which have contributed to the improvement of poultry and which have made this great industry an important part of animal agriculture.

1873- American Poultry Association founded; adopted American Standard of Excellence in 1874 and later the American Standard of Perfection, which became the guide for standards for purebred poultry, from which modern poultry stocks originated.

1884- Bureau of Animal Industry established as an agency of the U.S. Department of Agriculture.

1893- Dr. Theobold Smith of Rhode Island conducted research on fowl typhoid.

1894- Drs. Theobold Smith and V. A. Moore described the symptoms and cause of blackhead in turkeys.

1895- Charles Cyphers built a mammoth incubator, with the capacity for hatching 20,000 eggs and heated by hot water, on the William H. Truslow farm, Stroudsburg, PA.

- The disease now known as fowl typhoid was determined to be caused by *Bacterium saguinarium*, now known as *Salmonella gallinarum*.

1899- Dr. Leo Rettger of Yale University isolated an organism which caused the disease known as bacillary white diarrhea (B.W.D.). The organism was *Bacterium pullorum*.

1904- First official egg laying contest in the United States was held in Kansas.

1913- The tube agglutination test for the detection of chickens infected with B.W.D. was developed by Dr. F. S. Jones of Cornell University.

1914- First organized efforts to control B.W.D. began in Connecticut.

1916- The International Baby Chick Association was formed.

- The intradermal or wattle test for B.W.D. was developed by USDA.

1918- U.S. Postal Service accepted first baby chicks to be shipped by parcel post.

1922- Infectious laryngotracheitis was first identified in North America.

1923- First electric mammoth incubator was developed by Petersime.
- First flock of "commercial broilers" raised in Delaware.

1925- The name of the organism causing B.W.D., *Bacterium pullorum,* was changed to *Salmonella pullorum.*

1926- U.S. Egg Society, which evolved into the Institute of American Poultry Industries and was the forerunner of the Poultry and Egg Institute, was formed.

1927- Rapid serum test antigen for pullorum disease was reported by Runnells, Coon, Farley, and Thorpe.

1928- The name bacillary white diarrhea was changed to pullorum disease.
- The first annual meeting of Laboratory Workers in Pullorum Disease Eradication was held.

1931- Stained antigen for the rapid whole blood test for pullorum disease was reported by Schaffer, MacDonald, Hall, and Bunyea.
- Laying hen batteries, or cages, were put into limited use.
- Infectious bronchitis was first described by Schalk and Hawn.

1932- Vaccine for infectious laryngotracheitis was developed by Hudson and Beaudette.

1933- The need for standard terminology in the breeding and hatching industry was emphasized at International Baby Chick Association (IBCA) Convention in Michigan. Initial discussion was held on formation of the "National Poultry Improvement Plan."
- The first public demonstration of vent-sexing of day-old baby chicks was held at the IBCA Convention.
- Coryza of slow onset and long duration was described by J. B. Nelson and others.

1934- Hatcherymen, breeders, university and Government representatives approved uniform procedures and terminology for breeding practices and pullorum disease control during IBCA convention. These rules would govern participation in the National Poultry Improvement Plan.

1935- National Poultry Improvement Plan was established by act of Congress. Provisions were based on recommendations from IBCA and other meetings of industry and Government personnel.

1938- Infectious sinusitis in turkeys was decribed by Dickinson and Hinshaw.

1939- U.S. Department of Agriculture established the Regional Poultry Research Laboratory at East Lansing, Michigan, to study fowl paralysis (avian leukosis).

1940- National Turkey Federation was organized during the IBCA convention.

- Poultry and Egg National Board was organized at the IBCA convention.

1941- The Beltsville small white turkey, developed by Stanley J. Marsden, USDA, was made available to universities and private breeders.

1943- National Turkey Improvement Plan came into existence under USDA.

- Chronic respiratory disease (CRD) was described by Delaplane and Stuart.

1948- The first National Chicken-of-Tomorrow contest was held.

1949- The first U.S. Random Sample Egg Production Test was conducted in California.

1951- The International Baby Chick Association changed its name to American Poultry and Hatchery Federation (APHF).

1952- The American Poultry Historical Society was organized.

1954- The National Broiler Council was organized.

- The National Poultry Improvement Plan recognized flocks which are free of *S. gallinarum* (fowl typhoid), based on a test conducted at the same time as the pullorum disease test.

1956- Preparation of antigen for the rapid serum test for *Mycoplasma* was described by Adler, Yamamoto, and others.

1957- Poultry Products Inspection Act required all dressed poultry to be inspected for wholesomeness.

1958- *Mycoplasma meleagridis* (N strain) was reported by Adler and others as causing airsacculitis in turkey poults.

1959- Poultry Breeders of America was organized.

- The dipping of eggs in antibiotic solutions for the control of *M. gallisepticum* was described by Chalquest and Fabricant.

1961- National Animal Disease Laboratory was established in Ames, Iowa.

- The first year in which products handled by all turkey hatcheries in the National Turkey Improvement Plan were 100 percent "U.S. Pullorum-Typhoid Clean."

1962- Preparation of *M. synoviae* antigen for agglutination test was described by Olson and others.

1965- *Mycoplasma gallisepticum* (MG) testing program was added to National Turkey Improvement Plan.

1966- *Mycoplasma gallisepticum* testing program was added to National Poultry Improvement Plan.

1967- The first year in which products handled by all chicken hatcheries in the National Poultry Improvement Plan were 100 percent "U.S. Pullorum-Typhoid Clean."

1968- A herpesvirus is determined to be the causative agent of Marek's disease.

1970- The National Poultry Improvement Plan and the National Turkey Improvement Plan were combined into one program, the National Poultry Improvement Plan.

1971- The American Poultry and Hatchery Federation merged with the Institute of American Poultry Industries to become the Poultry and Egg Institute of America.

- Marek's disease vaccine was perfected at the USDA Regional Poultry Research Laboratory in East Lansing, Michigan.

1972- USDA declared an emergency due to the devastating effect of viscerotropic velogenic Newcastle disease (exotic, asiatic, or VVND).

1974- *Mycoplasma synoviae* testing program was added to National Poultry Improvement Plan.

- The first year in which no *M. gallisepticum* positive turkey breeding flocks were reported to the National Poultry Improvement Plan office.
- USDA made available the "U.S. Pullorum-Typhoid Clean State" status for States meeting certain prerequisites.

1980- USDA made available the "U.S. M. Gallisepticum Clean State, Turkeys" status for States meeting certain prerequisites.

1982- The National Poultry Improvement Plan included a program for the classification of started pullets according to their *Mycoplasma gallisepticum* status.

1983- *Mycoplasma meleagridis* testing program for turkeys was added to the National Poultry Improvement Plan.

- USDA declared that an extraordinary emergency existed because of highly pathogenic avian influenza in Pennsylvania poultry flocks.
- A record chicken hatching egg capacity of 413 million eggs was reported by participants in the National Poultry Improvement Plan. This represented the capacity of 92.3 percent of all U.S. chicken hatcheries.

1984- Twenty-eight States qualified for "U.S. Pullorum-Typhoid Clean State" status during the decade this program was available.

- The National Poultry Improvement Plan celebrated its 50th anniversary.
- The Bureau of Animal Health was established a century ago, heralding the start of the first 100 years of animal health work by the USDA.

Program Administrators

State Contact Representatives and Federal Coordinators of the National Poultry Improvement Plan

The responsibility for the administration of the National Poultry Improvement Plan is outlined in a Memorandum of Understanding between each Official State Agency and the U.S. Department of Agriculture. Included in this Memorandum is an agreement on the part of the State that they will provide a person to be designated as a Contact Representative to be responsible for the program within the State. The Memorandum also stipulates that the U.S. Department of Agriculture will provide persons as coordinators to coordinate the work of the program between the States and the Department.

The following is a listing of the persons designated as State Contact Representatives and Federal Coordinators and the years in which they served in this capacity.

State Contact Representatives

Alabama

Mr. R. B. Jones	1935-41
Mr. W. B. Collier	1942-43
Mr. H. M. Doss	1944-47
Mr. W. O. Hudgins	1948-49
Mr. Pyron Keener	1950----

Arizona

Mr. Clyde F. Rowe	1935-43
Mr. W. R. Van Sant	1944-59
Dr. F. D. Rollins	1960----

Arkansas

Mr. C. D. Stubbs	1935-41
Dr. J. S. Campbell	1942-58
Dr. David Isben	1959-65
Dr. R. M. Thomas	1966-67
Mr. Wayne H. Babbitt	1968-69
Dr. James B. Roberts	1970-72
Dr. L. E. Shawhan	1973-78
Dr. O. L. Kelsey	1979-82
Dr. H. M. Ghori	1983----

California

Mr. J. F. Harr	1945-48
Mr. R. A. Mueller	1949-55
Mr. J. M. Davison	1956-69
Mrs. Louise Woodard	1970-79
Mr. Henry Turner	1980-82
Mr. Mervin Amerine	1983----

Colorado

Mr. O. C. Ufford	1935-46
Mr. Harry O. Hard	1947-52
Mr. William H. Jordan	1953-55
Dr. T. E. Hartung	1956-58
Mr. Paul L. Brose	1959-60
Dr. Harry Muller	1961
Mr. John W. May	1962
Mr. Harold W. Poehlmann	1963-65
Mr. Raymond Comp	1966----

Connecticut *

Mr. Roy E. Jones	1936-51
Mr. George E. Corwin	1948-49
Dr. Jean V. Smith	1950-70
Dr. William A. Aho	1952-76
Dr. Robert J. Stadler	1971-80
Dr. Louis van der Heide	1977----
Dr. George C. Sturges	1981----

**Dual Contact Representatives*

Delaware

Mr. H. R. Baker	1935-58
Mr. W. R. Teeter	1959-61
Mr. Cecil A. Shirey	1962-66
Mr. William Lawrence, Jr.	1967-68
Mr. William C. Sloan	1969-72
Dr. H. Wesley Towers, Jr.	1973----

Florida

Dr. D. C. Gilles	1935-61
Dr. W. C. Haire	1962-82
Dr. Clarence L. Campbell	1983----

Georgia

Mr. Arthur Gannon	1935-43
Mr. J. C. Bell	1944-45
Mr. Arthur Gannon	1946-47
Mr. J. M. Shinkel	1948-55
Mr. R. J. Lee	1956-72
Dr. William W. Adams	1973----

Idaho

Mr. Pren Moore	1935-49
Mr. Reid Merrill	1950-54
Mr. Robert E. Black	1955-70
Dr. Gordon B. Meyer	1971-72
Mr. Charles F. Petersen	1973-80
Mr. Nathan Moreng	1981----

Illinois

Mr. V. R. Usrey	1935-41
Mr. Clarence Ems	1942-66
Mr. Urban E. Goldstein	1967-81
Dr. Charles D. Hertich	1982-83
Dr. Paul Spencer	1984----

Indiana

Mr. Leon Todd	1935-36
Mr. William Kohlmeyer	1936-41
Dr. J. Holmes Martin	1942-44
Dr. E. E. Schnetzler	1945
Dr. J. Holmes Martin	1946-62
Dr. James R. Carson	1963-80
Mr. Robert L. Hogue	1981----

Iowa

Mr. W. M. Vernon	1935-42
Mr. H. L. Wilcke	1943
Dr. A. J. G. Maw	1944
Mr. R. E. Phillips	1945-46
Mr. Clifford Stewart	1947-52
Mr. Richard T. O'Connell	1953-55
Mr. Leroy L. Kruskop	1956-63
Mr. Elston P. Erickson	1964-72
Mr. Russell D. Wells	1973-78
Ms. Kyla Jordan	1979----

Kansas

Mr. M. A. Seaton	1935-58
Mr. M. E. Jackson	1959-80
Dr. Albert Adams	1981----

Kentucky

Dr. J. Holmes Martin	1935-38
Mr. J. E. Humphrey	1939-64
Dr. John W. Tuttle	1965----

Louisiana

Mr. Clyde Ingram	1935-60
Mr. Kirk Germany	1961-64
Mr. J. B. Olinde, Jr.	1965-66
Mr. Charles L. Faller	1967-82
Dr. Debra Cox	1983----

Maine

Dr. E. R. Hitchner	1939-58
Dr. H. L. Chute	1959-69
Dr. J. F. Witter	1970-72
Mr. Roscoe F. Cuozzo	1973
Dr. Pierre Brunet	1974
Dr. Richard A. Moody	1975----

Maryland

Dr. Wade H. Rice	1935-36
Mr. Paul A. Raper	1937
Dr. Morley A. Jull	1938-55
Dr. C. R. Davis	1956-76
Dr. George Stein, Jr.	1977-80
Dr. John C. Shook	1981----

Massachussetts

Mr. Howard Whelan	1935-39
Mr. Julius Kroeck	1940-58
Mr. Pierre C. Boucher	1959-63
Mr. Raymond B. Smith	1964
Mr. Charles F. Shelnut	1965-75
Mr. James Sheehan	1976-78
Mr. Lawrence E. Bliss	1979-81
Mr. Harvey H. Smith	1982----

Michigan

Mr. J. M. Moore	1935-46
Dr. Howard C. Zindel	1947-80
Dr. Carl C. Hoyt	1981----

Minnesota *

Mr. W. K. Dyer	1937-57
Dr. L. E. Jenkins	1950-57
Mr. Roy C. Munson	1958-59
Mr. Roy D. Carlson	1960-77
Mr. Robert E. Moehrle	1978----
Dr. Harry R. Olson	1958----

Mississippi

Mr. J. D. Sykes	1935-37
Mr. F. Z. Beanblossom	1938-44
Mr. C. A. Roberts	1945-47
Mr. Paul Yount	1948-73
Mr. W. T. Tramel	1974----

Missouri *

Dr. E. M. Funk	1935-73
Miss Harriet Rimmer	1974----
Dr. Richard W. Stringer	1978----

Montana

Miss H. E. Cushman	1935-44
Mr. W. J. Butler	1945-46
Mr. Allen F. Beekler	1947-51
Mr. John Ferguson	1952-61
Mr. Edward C. Wren	1962
Mr. C. L. Purdy	1963-64
Mr. Thomas A. McMaster	1965-69
Dr. Thomas F. Lofthouse	1970-72
Dr. J. W. Stafford	1973-74
Dr. G. C. Halver	1975-78
Dr. James W. Glosser	1979-83
Dr. Donald P. Ferlicka	1984----

Nebraska

Mr. F. E. Mussehl	1935-37
Mr. J. H. Claybaugh	1938-54
Mr. Doyle H. Free	1955----

New Hampshire

Mr. R. C. Bradley	1935
Mr. R. C. Durgin	1936-40
Mr. R. B. Halpin	1941
Mr. David Flagg	1942
Dr. T. B. Charles	1943-49
Mr. E. T. Bardwell	1950-54
Dr. W. C. Skoglund	1955
	1957-73
Dr. R. C. Ringrose	1956
Dr. C. B. Dearborn, Jr.	1974-78
Dr. George C. Cilley	1979----

New Jersey

Mr. Warren W. Oley	1935
Mr. Albeon Jones	1936
Mr. Leon Todd	1937-40
Mr. B. K. Messersmith	1941-70
Mr. Leroy F. Bennett	1971-74
Mr. Marvin Van Hise	1975-77
Dr. Robert Horton	1978-83
Dr. Ernest Zirkle	1984----

New Mexico

Mr. W. M. Ginn	1935-38
Mr. E. E. Anderson	1939-51
Mr. H. L. Mathews	1952-69
Dr. D. W. Francis	1970-81
Dr. Stanley D. Farlin	1982----

**Dual Contact Representatives*

New York

Mr. L. M. Hurd	1935
Mr. Walter H. Schait	1936-38
Mr. Donald E. Kuney	1939-42
Mr. A. L. Douglas	1943-44
Mr. Ralph Wooster	1945
Mr. Robert W. Patten	1946-47
Mr. Francis H. Schaefer, Jr	1948-52
Mr. G. H. Padgham	1953-56
Mr. Bruce D. Hagan	1957-68
Dr. Harold E. Nadler	1969-82
Dr. Bruce Widger	1983----

North Carolina

Mr. William Moore	1935-47
Mr. L. J. Faulhaber	1948-49
Mr. Louis J. Fourie	1950-73
Dr. Kenneth G. Keenum	1974----

North Dakota

Mr. Frank E. Moore	1935-39
Mr. A. J. Lanz	1940-45
Mr. S. A. Colliver	1946
Mr. Roy D. Carlson	1947-49
Mr. N. S. Patterson	1950
Mr. Lloyd M. Forness	1951-54
Mr. William J. Duke	1955-59
Mr. David Dickens	1960-63
Mr. Glenn E. Harris	1964-65
Mr. Gary Rehorsky	1966-68
Mr. Ellis L. Berg	1969-72
Mr. Arne Dahl	1973-74
Mr. Myron Just	1975-79
Mr. Phil Park	1980----

Ohio

Mr. C. M. Ferguson	1935-48
Mr. G. S. Vickers	1949-56
Mr. Bruce R. Davisson	1957-68
Mr. Robert L. Hocker	1969-83
Mr. Jack L. Heavenridge	1984----

Oklahoma

Mr. R. B. Thompson	1935-48
Mr. Harold P. Hutton	1949-59
Mr. Jack Cornelius	1960-63
Mr. Joseph L. Meilbergen	1964-66
Mr. James N. Ballinger	1967-72
Mr. Billy Ray Gowdy	1972-75
Mr. Ray C. Cook	1976-82
Mr. Richard Couch	1983----

Oregon

Mr. F. L. Knowlton	1935-40
Mr. N. L. Bennion	1941
Mr. C. E. Holmes	1942-45
Mr. Price Schroeder	1946-48
Mr. Earl Reitsma	1949-67
Dr. Ramsay G. Burdett	1968----

Pennsylvania

Mr. E. J. Lawless, Jr.	1935-78
Dr. E. T. Mallinson	1979-80
Mr. Charles W. Dorsey	1981
Dr. Max A. Van Buskirk, Jr.	1982----

Rhode Island

Mr. Russell Hawes	1935-36
Mr. G. H. Geddes	1937-39
Mr. Ralph A. Farrow	1940-74
Mr. Ara Goshdigian	1975-79
Mr. Michael Gallonio	1980----

South Carolina

Mr. Percy H. Gooding	1935-63
Mr. Thomas C. Stewart	1964-72
Dr. K. A. Holleman	1973-80
Dr. Buddy L. Hughes	1981
Mr. John F. Welter	1982----

South Dakota

Mr. O. J. Weisner	1935-36
Mr. M. S. Simonson	1937-40
Mr. Ralph Mernaugh	1941
Mr. Richard Heeren	1942-44
Mr. Lee W. Herrick, Jr.	1945
Mr. J. Ervin Boyd	1946-51
Mr. Boyd J. Bonzer	1952-77
Dr. C. Wendell Carlson	1978----

Tennessee

Mr. A. J. Chadwell	1939-62
Dr. J. B. Ward	1963-64
Mr. Lee Roy Tyler	1965-77
Mr. Ed Evans	1978-79
Dr. John T. Ragan	1980
Ms. Sarah Matthews	1981-82
Mr. Lee F. Austin	1983
Mr. James Thomas	1984----

Texas

Mr. D. H. Reid	1935-36
Mr. A. H. Demke	1937-46
Mr. T. A. Hensarling	1947-66
Mr. David D. Ozment	1967-69
Mr. William N. Powers	1970-72
Dr. Floyd A. Golan	1973----

Utah

Mr. Carl Freschknecht	1935-40
Mr. Ralph S. Blackham	1941
Mr. Carl Freschknecht	1942-47
Mr. Lawrence Morris	1948
Mr. W. R. Jenkins	1949-51
Mr. C. Elmer Clark	1952-56
Dr. Don W. Thomas	1957-75
Dr. J. Alan Thomas	1976----

Vermont

Mr. A. W. Lohman	1935-37
Mr. H. A. Dwinell	1938-51
Mr. H. V. Shute	1952-73
Mr. Leo O'Brien	1974-75
Dr. A. E. Janawicz	1976-78
Dr. D. U. Walker	1979----

Virginia

Mr. H. S. Shomo	1937-58
Mr. Gordon Tucker	1959-72
Mr. Ivan L. Long	1973----

Washington

Dr. J. W. Kalkus	1935-52
Dr. David F. Allmendinger	1953-75
Dr. Otto L. Montgomery	1976-77
Dr. John Doherty	1978----

West Virginia

Mr. E. T. Wightman	1935-44
Mr. H. M. Hyre	1945-57
Mr. C. C. Blake	1958-66
Mr. Ralph Hitt	1967----

Wisconsin

Dr. W. Wisnicky	1937-38
Mr. C. H. King	1939-52
Mr. C. Baxter Newton	1953-81
Dr. Sarah Hurley	1982-83
Dr. Richard A. Decker	1984----

Wyoming

Mr. M. O. North	1935-36
Mr. O. N. Summers	1937-39
Mr. M. O. North	1940
Mr. Maurice H. Meshew	1941-44
Mr. Lawrence Morris	1945-46
Mr. Maurice H. Meshew	1947
Mr. Boyd Ivory	1948
Mr. George T. Davis	1949
Mr. Boyd Ellis	1950-77
Dr. Dan C. Hutto	1978-81
Dr. P. O. Stratton	1982
Dr. William C. Russell	1983----

Federal Coordinators

The following is a list of persons who have served in the administration of the National Poultry Improvement Plan at the Federal level, together with their titles and the years in which they served.

Mr. Berley Winton,	Senior Coordinator	1935-36
Mr. Paul B. Zumbro,	Coordinator	1935-36
	Senior Coordinator	1936-61
Mr. James E. Humphrey,	Coordinator	1936-37
Mr. Melvin W. Buster,	Coordinator	1937-43
Mr. J. D. Sykes,	Coordinator	1937-41
Mr. Frank E. Moore,	Coordinator	1941-46
Mr. Arthur A. Gannon,	Coordinator	1943-45
Dr. Albert B. Godfrey,	Coordinator	1944-49
Mr. R. Baker Jones,	Coordinator	1945-47
Dr. L. C. Heemstra,	Veterinary Coordinator	1947-52
Mr. Roy D. Carlson,	Coordinator	1948-58
Dr. Carl W. Hess,	Coordinator	1949-56
Dr. C. D. Gordon,	Coordinator	1948
		1957-60
Mr. Sam A. Moore,	Coordinator	1948-61
	Senior Coordinator	1961-69
	Coordinator (part time)	1970-72
Mr. Raymond D. Schar,	Coordinator	1959-69
	Senior Coordinator	1969-84
	Coordinator (part time)	1984----
Dr. Irvin L. Peterson,	Veterinary Coordinator	1971-83
	Senior Coordinator	1984----
Dr. John L. Williams,	Veterinary Coordinator	1982-84

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